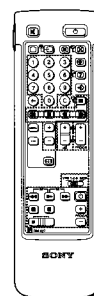
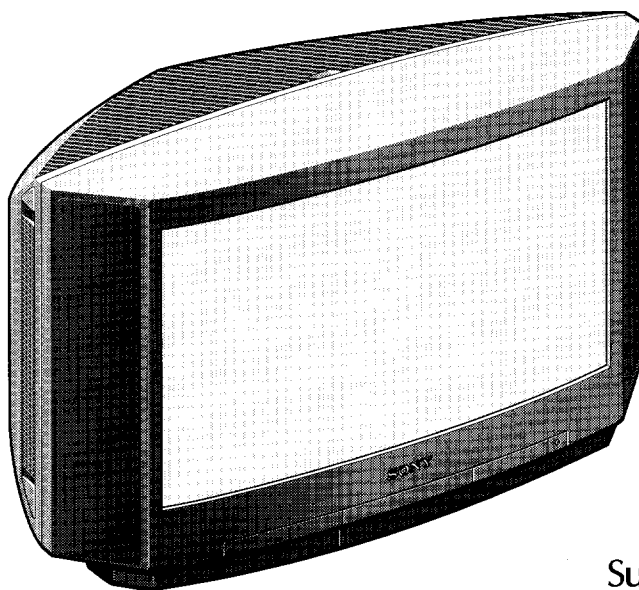


# SERVICE MANUAL

# BE-3B CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-24WS1A	RM-837	Italian	SCC-G81S-A	KV-24WS1K	RM-837	OIRT	SCC-G86K-A
KV-24WS1B	RM-837	French	SCC-G85Q-A	KV-24WS1R	RM-837	OIRT	SCC-G86R-A
KV-24WS1D	RM-837	AEP	SCC-G77S-A	KV-24WS1U	RM-837	UK	SCC-G87L-A
KV-24WS1E	RM-837	Spanish	SCC-G82S-A				



Super Trinitron  
**WIDE**

TRINITRON® COLOR TV  
**SONY®**



ITEM	MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)	
French	L, B/G/H, I	L VHF: F2-F10 UHF: F21-F69 Cable TV: B-Q, S21-S44 B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05 ITALY VHF: A-H UHF: H1, H2 I B21-B69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)	
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)	
Spanish	B/G/H	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)	
OIRT	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)	
UK	I	UHF: B21-B69	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)	

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power Consumption	93W	93W	93W	93W	93W	157.5W

## SPECIFICATIONS

Picture Tube Super Trinitron Wide  
Approx. 61 cm (24 inches)  
(Approx. 56 cm picture measured diagonally)  
100° -deflection

### Input/Output Terminals

#### [REAR]

- ② 21-pin Euro connector (CENELEC standard)
  - Inputs for audio and video
  - Inputs for RGB
  - Outputs of TV video and audio
- ② 21-pin Euro connector
  - Inputs for audio and video
  - Inputs for S video
  - Outputs of TV video and audio (selectable)
- ② Audio outputs (variable) - phono jacks

Sound output 2x15W (RMS)  
2x30W (music power)  
Dimensions Approx. 696x426x479 mm  
Weight Approx. 35 kg  
Supplied accessories RM-837 Remote Commander (1)  
battery R6 (1)

#### Other features

Fastext  
Toptext (KV-24WS1A/24WS1B/24WS1D/24WS1E/  
24WS1K/24WS1R only)  
Nicam (KV-24WS1B/24WS1E/24WS1U only)

#### [FRONT]

- ③ Video input-phono jack
- ③ Audio input-phono jacks
- ③ S video input-4-in DIN
- ② Headphone jack : stereo mini jack


**[RM-837]**

Remote control system    infrared control  
 Power requirements      1.5V dc  
                                      1 battery IEC designation  
                                      R6 (size AA)  
 Dimensions                 Approx. 65x225x21 mm (w/h/d)  
 Weight                        Approx. 157g (Not including battery)

**Design and specifications are subject to change without notice.**

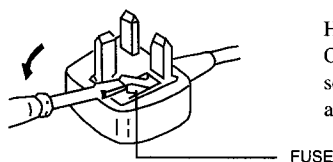
Model name Item	KV-24WS1A	KV24WS1B	KV-24WS1D	KV-24WS1E	KV-24WS1K KV-24WS1R	KV-24WS1U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON	ON	ON
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	ON
Norm D/K	ON	OFF	ON	OFF	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

### **WARNING ( KV-24WS1U only )**

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the  mark.

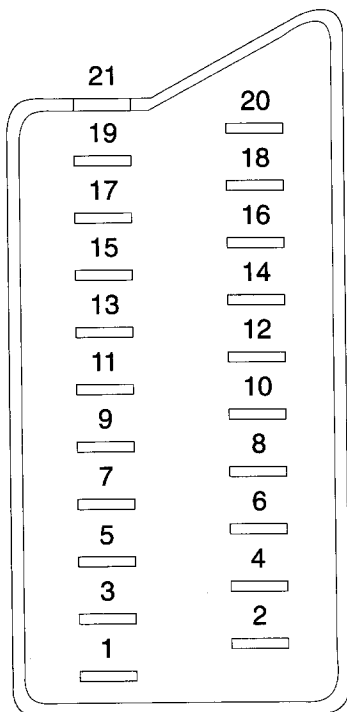
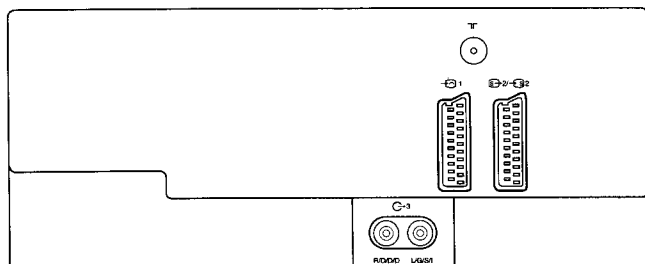
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.  
 Open the fuse compartment with the screwdriver blade and replace the fuse.

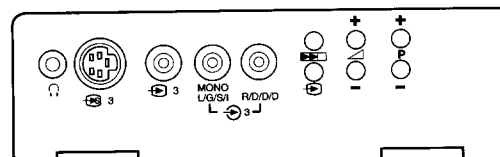
21 pin connector (1, 2/2)



Pin No		Signal	Signal level
1	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance: less than 1kohm*
2	○	Audio input B (right)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
3	○	Audio output A (left)	Standard level: 0.5Vrms Output impedance: less than 1kohm*
4	○	Ground (audio)	
5	○	Ground (blue)	
6	○	Audio input A (left)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
7	○	Blue input	0.7V±3dB, 75ohms, positive
8	○	Function select (AV control)	High state (9.5—12V): Part mode Low state (0—2V): TV mode Input impedance: More than 10kohms Input capacitance: Less than 2nF
9	○	Ground (green)	
10	○	Open	
11	○	Green	Green signal: 0.7V±3dB. 75ohms, positive
12	○	Open	
13	○	Ground (red)	
14	●	Ground (blanking)	
15	○	Red input	0.7V±3dB, 75ohms, positive
	—	(S signal) chroma input	0.3V±3dB, 75ohms, positive
16	○	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance: 75ohms
17	○	Ground (video output)	
18	○	Ground (video input)	
19	○	Video output	1V±3dB, 75ohms, positive Sync: 0.3V(-3, +10dB)
20	○	Video input	1V±3dB, 75ohms, positive Sync: 0.3V(-3, +10dB)
	—	Video Input/Y (S signal)	1V±3dB, 75ohms, positive Sync: 0.3V(-3, +10dB)
21	○	Common ground (plug, shield)	

○ Connected    ● Not Connected (open)    \* at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm , positive Sync. 0.3V -3/+10 dB
4	C (S signal) input	0.3V ± 3dB 75 ohm , positive Sync.





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**CAUTION**

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

**WARNING !!**

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.  
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.


**ATTENTION**

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

**ATTENTION !!**

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

**ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!**

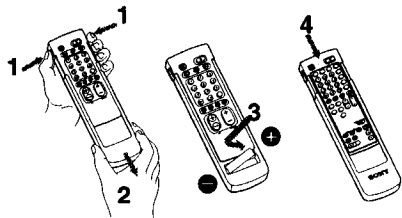
LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

# SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

## Getting Started

### Inserting the Battery Into the Remote Commander



Remove the cover.

Check the correct polarity.

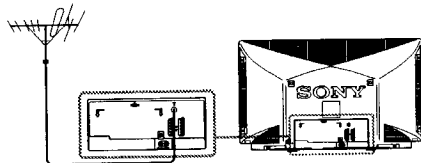
Refit the outside cover making sure that the Full Function side is visible.

### About Battery Life

Under normal operation, a battery will last up to half a year. Always remember to dispose of used battery in an environmental friendly way.

### Connecting the Aerial

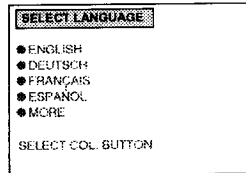
Connect aerial to the "I" socket at the rear of the TV. (cable not supplied)



### Choosing a Language

(See inside of front cover and back cover)

- Press **[A]** on the TV.  
The TV turns on. If the standby indicator **[B]** on the TV is lit, press **[3]** or any number button **[4]** on the Remote Commander.
- Press **MENU [7]** on the Remote Commander.  
The SELECT LANGUAGE screen appears.
- Press one of the colour buttons **[17]** on the Remote Commander to select a language (Press the white button **[17]** to display other language alternatives).  
The SELECT LANGUAGE screen clears and all subsequent menus appear in the chosen language.



**Note:** From the second time you turn on the TV, the MENU screen appears instead of the SELECT LANGUAGE screen. Press the yellow button **[17]** then press the white button **[17]** to redisplay the SELECT LANGUAGE screen.

### Tuning in to Channels

You can tune in up to 100 channels to programme positions either automatically or manually.

**auto tuning:** A single button press allows all receivable channels to be tuned. Use if you are unfamiliar with the channel numbers of stations.

**manual tuning:** Use if you are familiar with the channel numbers of stations.

Choose the more appropriate way for you.

### Tuning in to Channels Automatically

There are two possibilities for auto tuning;

- On the TV: hold down **[E]** on the front of the TV for 2 seconds  
**Note:** The button **[E]** for Automatic Presetting of channels is protected to prevent accidental usage. Use the tip of a pencil to press it.

or

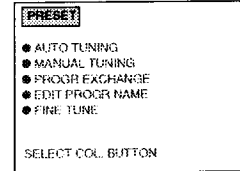
- On the Remote Commander: as follows

- Press **MENU [7]**.
- Press the white button **[17]**.
- Hold down the red button **[17]** for 2 seconds.

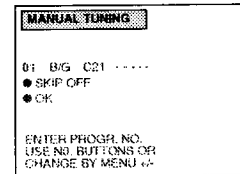
**Note:** Press the green button **[17]** to cancel.

### Tuning in to Channels Manually

- Press **MENU [7]**.  
The MENU screen appears.
- Press the white button **[17]** to select PRESET.  
The PRESET screen appears.



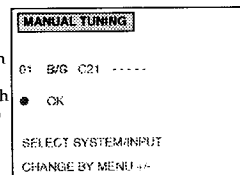
- Press the green button **[17]** to select MANUAL TUNING.  
The MANUAL TUNING screen appears.



- Press the number buttons **[4]** or **MENU+/- [9]** to select a programme position.  
If you use the number buttons **[4]**, enter a double-digit number. (e.g. for programme number 4, first press 0, then 4)

- Press the green button **[17]**.

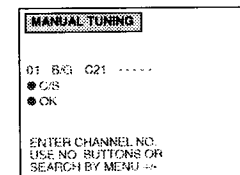
**Note:** Use **MENU +/- [9]** to select TV system. You can alternatively select input sources which may be assigned to programme positions. The display changes as follows:



B/G ↔ D/K ↔ AV1 ↔ RGB ↔ AV2 ↔ YC2 ↔ AV3 ↔ YC3

- Press the green button **[17]**.

**Note:** If a video input source is selected in step 5, this is now stored. Refer to step 4 to tune other programme positions.



- Press the red button **[17]** to select C (regular channel) or S (cable channel).

- Press the number buttons **[4]** or **MENU+/- [9]** to select the channel number.  
If you use the number buttons **[4]**, enter a double-digit number. (e.g. for channel 23, first press 2, then 3)

- Press the green button **[17]** to store.

**Note:** If you want to preset other channels, repeat steps 4 to 9.

- Press **MENU [7]** twice to return to the normal screen.

**Note:** You can skip unused programme positions when selecting programmes with the **PROGR +/- [18]** buttons. Press the red button **[17]** to skip in step 4. However, the skipped programmes may still be called up when you use the number buttons.

### Basic TV Operations

#### Turning the TV on and off

**Turning on**  
Depress **[A]** on the TV.

**Turning off temporarily**  
Press **[10]** on the Remote Commander.  
The TV enters standby mode and the standby indicator **[B]** on the front of the TV lights up.

**Turning on again**  
Press **[3]**, **PROGR +/- [18]**, or one of the number buttons **[4]** on the Remote Commander.

**Turning off completely**  
Depress **[A]** on the TV.  
**Note:** It is recommended to use **[A]** to turn off the TV. This could help you save energy.

#### Selecting TV Programmes

Press **PROGR +/- [18]** or press number buttons **[4]**.

**To select a double-digit number**  
Press **-/- [5]**, then the number buttons **[4]**.

#### Adjusting the Volume

Press **Δ +/- [19]**.

#### Muting the Sound

Press **[1]**.  
To resume normal sound, press **[1]** again.

#### Displaying the On-screen Indications

Press **[14]** once to display the on-screen indications. Press again to make the indications disappear.

#### Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can adjust or select the functions as follows:

Press **Δ +/- [D]** to adjust the volume.

Press **P +/- [C]** to select programme numbers or to turn the TV on from the standby mode.

Press **[F]** to select the input source.

Press **[E]** to preset channels automatically.

# Advanced TV Operations

## Operating the Menu System

You can adjust picture and sound, preset channels to programme positions and utilise other convenient features by using the following menu system.

## Adjusting the Picture and Sound

Although picture and sound are adjusted at the factory you can adjust them to suit your own taste.

- 1 Press MENU [7].  
The MENU screen appears.



- 2 Press the red button [17] to select PICTURE or the green button [17] to select SOUND.

- 3 Press the respective colour button [17] to select an item.

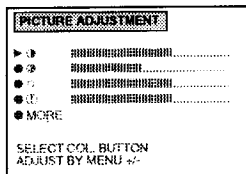
- 4 Press MENU +/- [9] to adjust.

- 5 Press MENU [7] twice or wait until the menu displays disappear automatically to return to the normal screen.

**Note:** When selecting menus, the picture becomes darker. If, however, an item in the PICTURE ADJUSTMENT menu is selected, normal level of TV picture is restored to allow the best adjustment.

## PICTURE ADJUSTMENT

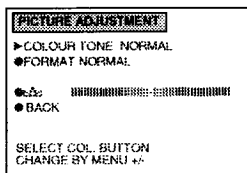
(First Page)



Press colour button	Effect
<b>Red:</b> For Picture [17]	Less ——— More
<b>Green:</b> For Colour [17]	Less ——— More
<b>Yellow:</b> For Brightness [17]	Darker ——— Brighter
<b>Blue:</b> For Sharpness [17]	Softer ——— Sharper
<b>White:</b>	Next page of PICTURE ADJUSTMENT

## PICTURE ADJUSTMENT

(Second Page)

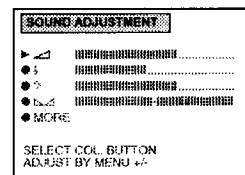


Press colour button	Effect
<b>Red:</b> For Colour Tone	Normal -> Warm (reddish colour tone) -> Cool (blueish colour tone)
<b>Green:</b> For Format	Using [17] [20] select mode: 4:3 for normal ratio 4:3 Smart for imitation of wide screen effect (16:9) for 4:3 broadcasts Wide for 16:9 broadcasts Zoom for imitation of wide screen effect (16:9) for movies broadcast in cinematographic format Zoom ↑ (for scroll-up of screen to show sub-title) Whilst in zoom mode, press MENU +/- [9] to select Zoom ↑. Press MENU +/- [9] again to return to zoom mode
<b>Blue:</b> For Hue control [17] (only for NTSC video signals)	Reddish ——— Greenish
<b>White:</b>	Back to first page of PICTURE ADJUSTMENT

**Note:** Press [17] [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

## SOUND ADJUSTMENT

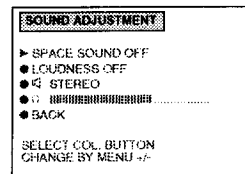
(First Page)



Press colour button	Effect
<b>Red:</b> for Volume [17]	Less ——— More
<b>Green:</b> for Treble [17]	Less ——— More
<b>Yellow:</b> for Bass [17]	Less ——— More
<b>Blue:</b> for Balance [17]	More left - more right
<b>White:</b>	Next page of SOUND ADJUSTMENT

## SOUND ADJUSTMENT

(Second Page)



Press colour button	Effect
<b>Red:</b> for Space Sound	OFF: normal sound ON: for a special acoustic sound effect
<b>Green:</b> for Loudness	OFF: normal sounds ON: when listening to music broadcast
<b>Yellow:</b> for Stereo:	Stereo -> Mono A (left channel) -> Mono B (right channel) -> Mono
<b>Blue:</b> for Headphone volume:	Less ——— More
<b>White:</b>	Back to first page of SOUND ADJUSTMENT

**Note:** Press [17] [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

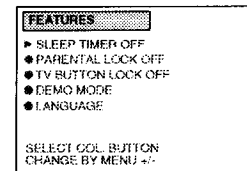
## Using Special Features

With your TV you can utilise special features such as Parental Lock or Sleep Timer.

- 1 Press MENU [7].  
The MENU screen appears.
- 2 Press the yellow button [17] to select FEATURES.
- 3 Press the respective colour button [17] to select an item.
- 4 Press MENU +/- [9] to change.
- 5 Press MENU [7] twice or wait until the menu displays disappear automatically to return to the normal screen.



## FEATURES



Press colour button	Effect
<b>Red:</b> for Sleep Timer	OFF -> 0:30 -> 1:00 -> 1:30 -> 2:00 (hours) After the selected time the TV set switches itself automatically into standby mode.
<b>Green:</b> for Parental Lock (For preventing children from watching programmes which you consider unsuitable)	OFF: Normal setting ON: The TV-channel you are watching is now blocked. In this way you can prevent undesirable broadcasts from appearing on the screen.
<b>Yellow:</b> for TV Button Lock	OFF: Normal setting ON: The buttons on the TV set do not function anymore. (The Remote Commander still operates)
<b>Blue:</b> for Demo Mode	ON: A sequence of menu pictures is displayed. Press any button on the Remote Commander to stop the function.
<b>White:</b> for Language	The SELECT LANGUAGE screen appears.

## Advanced Presetting Functions

### Exchanging Programme Positions

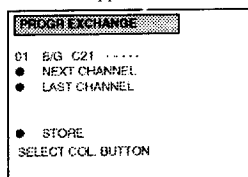
You can exchange the programme positions to a preferred order (example: exchange programme 09 (channel C21) with programme 15 (channel C24)).

- 1 Press MENU [7].  
The MENU screen appears.



- 2 Press the white button [17].  
The PRESET screen appears.

- 3 Press the yellow button [17].  
The PROGR EXCHANGE screen appears.



- 4 Press the white button [17] repeatedly until the desired programme number (09) appears.

- 5 Press the red or the green button [17] repeatedly until the desired channel number (C24) appears.

- 6 Press the white button [17] to store.  
Now the exchange has been completed. Channel C24 is tuned in to programme 09 and channel C21 is tuned in to programme 15.

- 7 Press MENU [7] twice to return to the normal screen.

### Editing Programme Names

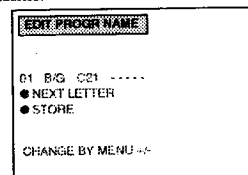
You can edit the programme names up to five letters.

- 1 Press MENU [7].  
The MENU screen appears.



- 2 Press the white button [17].  
The PRESET screen appears.

- 3 Press the blue button [17].  
The EDIT PROGR NAME screen appears.  
The first character flashes.



- 4 Press MENU+/- [9] to edit the first letter.  
The first letter changes as follows;

A ↔ B ↔ ... ↔ Z ↔ 0 ↔ 1 ↔ ... ↔ 9 ↔ "-" (space)

- 5 Press the red button [17] to move to the next letter.

- 6 Repeat steps 4 to 5, until the fifth letter is chosen.

- 7 Press the green button [17].  
The programme name is stored, and the normal screen appears. To edit another programme name, repeat steps 1 to 7.

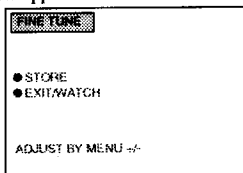
### Fine Tuning

You can adjust the receiving condition by the FINE TUNE function.

- 1 Press MENU [7].  
The MENU screen appears.

- 2 Press the white button [17].  
The PRESET screen appears.

- 3 Press the white button [17] again.  
The FINE TUNE screen appears.



- 4 Press MENU+/- [9] to adjust the receiving condition.

- 5 Press the red button [17] to store the adjustment, or press the green button [17] not to store.  
Then the normal screen appears. If you have pressed the green button, the fine tuned condition is cancelled once you choose another programme.

**Note:** If the FINE TUNE screen disappears automatically before you press the red button [17], the fine tuned condition is not stored. Repeat steps 1 to 5.

### Tuning in to a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset.

- 1 Press C [16] on the Remote Commander. For cable channels, press C [16] twice.  
The indication "C" ("S" for cable channels) appears on the screen.

- 2 Enter a double-digit channel number using the number buttons (e.g. for channel 23, first press 2, then 3).  
The channel appears.  
However, the channel is not stored.

## Teletext Operation

TV stations broadcast teletext programmes via the TV channels. For basic operation of teletext, use the simple side of the Remote Commander. For the advanced features of teletext, use the buttons indicated in green on the full function side of the Remote Commander.

### Basic Teletext Operation

#### Switching Teletext on and off

- 1 Select the channel which carries the teletext service you wish to view.

- 2 Press [11] to display Teletext.  
If no teletext signal is broadcast, the indication P100 is displayed on a black screen.



- 3 Input three digits for the page number using the number buttons [4].

The numbers are displayed on the screen and the requested page appears in a few seconds.

**Note:** If you make a mistake, type in any three digits, then re-enter the correct page number.

- 4 Press [3] once or [11] twice to return to the TV mode.

**Note:** To change the teletext channels. First press [3] to return to the TV mode, then repeat steps 1 to 3.

**Note:** If the signal of a TV channel is weak, teletext errors may occur.

### Advanced Teletext Operation

#### Using Fastext

With Fastext you can access pages with one button press. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons [6] on the Remote Commander.

Press the corresponding colour button [6] on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed in a few seconds.

#### Requesting the Index page

Press [17]. The Index page appears.

#### Accessing the next or preceding page

Press [18] (PAGE +) or [18] (PAGE -). The next or the preceding page appears on the screen.

#### Superimposing the teletext display on the TV picture

Press [11] once if you are in text mode or press [11] twice if in TV mode.

To return to the normal teletext display press [11] twice.



#### Preventing a teletext page from being updated or changed

Press [2] (HOLD). The HOLD symbol (H) appears on the screen and the selected subpage is held until you press [11] to cancel.

### Enlarging the teletext display

Press [13] once to enlarge the upper half. Press twice to enlarge the lower half. Press again to restore the normal display.



### Revealing concealed information (e.g. answers to a quiz)

Press [14] (REVEAL). The information is revealed. Press [14] again to conceal the information.

### Watching TV while waiting for a requested page to be displayed

- 1 Request a new teletext page.

- 2 Press [12] (TEXT CL).  
The TV programme is displayed and the symbol (T) is displayed at the top of the page.  
**Note:** When the requested page is available the page number is displayed at the top of the screen.

- 3 Press [11] to view the page.

**Note:** To cancel the request  
Display the teletext page, then press [11]. The request is now cancelled. Press [3] to resume TV mode.

### Using the Favourite Page system

You can store up to four of your favourite teletext pages per programme with the help of the Favourite page system. In this way you have quick access to the pages you watch frequently.

#### Storing the Favourite Pages

- 1 Select the page you would like to store using the number buttons [4].

- 2 Press [15] twice.  
The colour prompts at the bottom of the screen flash.

- 3 Press any of the colour buttons [6] on the Remote Commander to store the selected page.  
The page is now stored on this button.

Repeat steps 1 to 3 for the other 3 pages available.

#### Displaying the Favourite pages

- 1 Press [15].

- 2 Press the colour button [6] corresponding to the colour prompt onto which the desired page is stored.  
The page is requested. (It may take a few seconds to be received).

**Note:** Step 1 must be taken before every favourite page selection, otherwise the normal Fastext facility operates.

### Using the Time Function in the TV mode

Press [12] to request the time. Press again to cancel the request.

**Note:** This function is available only when teletext is broadcast.

## Connecting Other Equipment

You can connect optional audio/video equipment to this TV such as VCRs, video disc players, cameras, external speakers or stereo systems.

Connector	Acceptable input signal	Available output signal
AV1 (RGB)	Audio/video and RGB signal	Audio/video signal from TV Tuner
AV2 (YC2)	Audio/video and S video signal	Audio/video signal from selected source
AV3	Audio/video signal and	No outputs
	Audio/S video signal	
R/D/D/D=L/G/S/I	No inputs	Audio signal (variable)

To watch a video input picture, press  $\odot$  2 until the desired video input appears.

To return to the normal TV picture, press  $\odot$  2 repeatedly or press  $\square$  3.

**Note:** If you have a decoder, connect it to AV1 M.

## Connecting a VCR Using the TV Aerial Terminal

Connect the aerial output of the VCR to the aerial terminal K of the TV. It is recommended to tune in the VCR signal to programme number "0". For details, see "Tuning in to Channels Manually" on page 18.

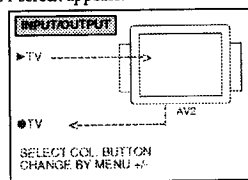
**Note:** S video input (Y/C input) I L Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals. Separating the Y and C signals prevents them from interfering with each other and therefore improves the picture quality (especially luminance). This TV is equipped with 2 video input terminals through which these signals can be input directly.

## Checking and Selecting the Input and Output Sources Using the Menu

You can display a menu screen to see which input and output source are selected. You can also change the selection using this menu.

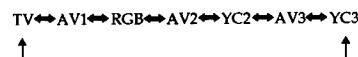
### Checking the Input and Output Sources

- 1 Press MENU 7. The MENU screen appears.
- 2 Press the blue button 17 to select INPUT/OUTPUT. The INPUT/OUTPUT screen appears.



### Selecting an Input Signal

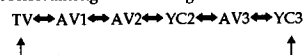
Press the red button 17 to select INPUT. Press MENU +/- 9 to select the desired input source. You can select among the following sources:



### Selecting an Output Signal

The S 2 / -S2 connector L outputs the source input from the other connectors. Press the green button 17 to select OUTPUT. Press MENU +/- 9 to select the desired output source.

You can select among the following sources:



**Note:** Press MENU 7 twice or wait until the menu displays disappear automatically to return to the normal screen.

## Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most Sony remote-controlled video equipment such as: Beta, 8mm or VHS VCRs or video disc players.

### Tuning the Remote Commander to the equipment

- 1 Set the VTR 1/2/3 MDP selector 21 according to the equipment you want to control:  
VTR 1: Beta or VCR  
VTR 2: 8mm VCR  
VTR 3: VHS VCR  
MDP: Video Disc Player

- 2 Use the buttons 22 to operate the additional equipment.

**Note:** If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.

**Note:** If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

**Note:** When you use the (record) button, make sure to press this button and the one to the right of it simultaneously.

## Using Headphones

You can utilise headphones. Connect them to the headphone jack J to mute the sound from the speakers.

**Note:** You cannot control the sound adjustment except for volume.

## For your information

### Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

#### No picture (screen is dark), no sound

- Plug the TV in.
- Press  $\odot$  A on the TV. (If the standby indicator B is lit, press  $\square$  3 or any number button 4 on the Remote Commander.)
- Check if the selected video source is on.
- Turn the TV off for three or four seconds and then turn it on again using  $\odot$  A.

#### Poor or no picture (screen is dark), but good sound

- Press MENU 7 to enter the MENU screen, and press the red button 17, then adjust  $\odot$  and  $\odot$ .

#### Good picture but no sound

- Press  $\triangle$  + 19.
- If  $\times$  is displayed on the screen, press  $\times$  1.

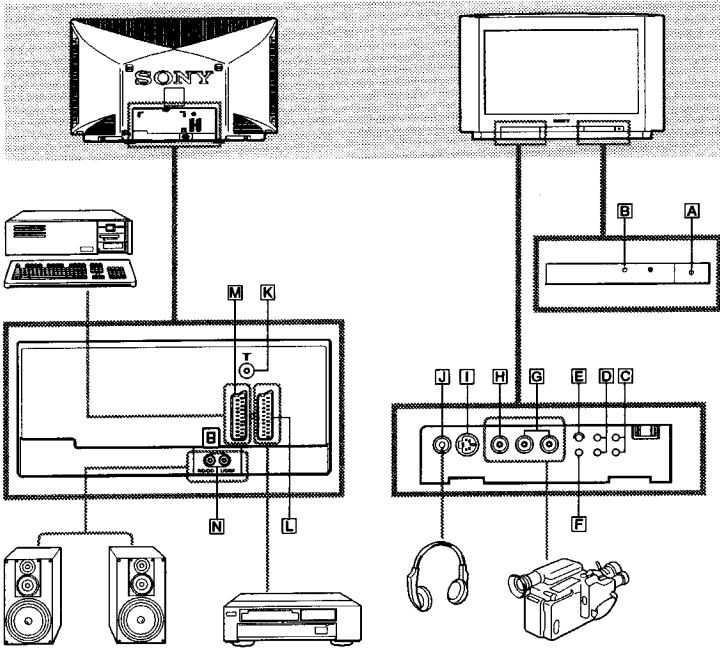
#### No colour for colour programmes

- Press MENU 7 to enter the MENU screen, and press the red button 17, then adjust  $\odot$ .

#### Remote Commander does not function

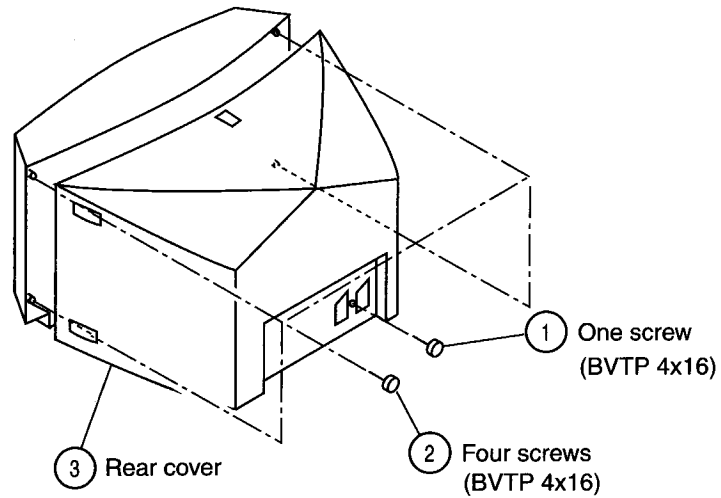
- Replace the battery.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

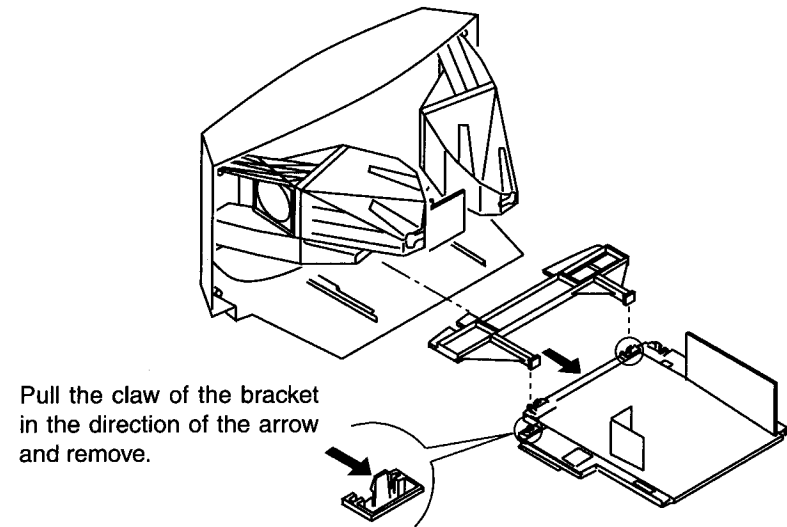


## SECTION 2 DISASSEMBLY

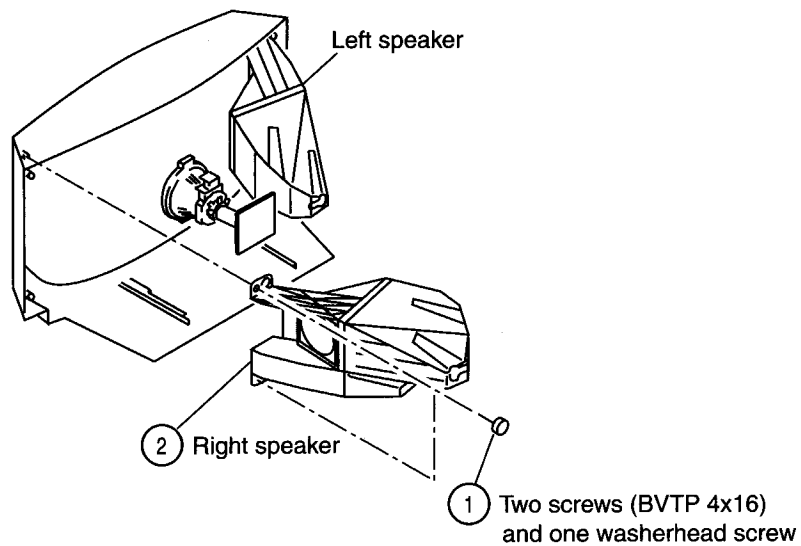
### 2-1. REAR COVER REMOVAL



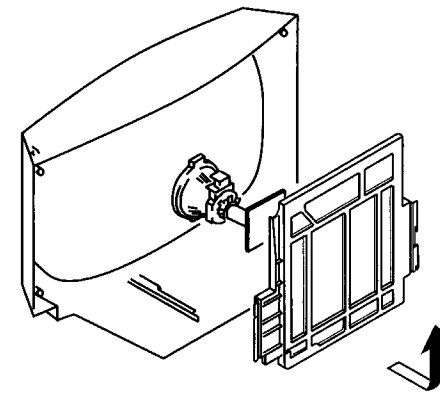
### 2-2. CHASSIS ASSY AND H BRACKET REMOVAL



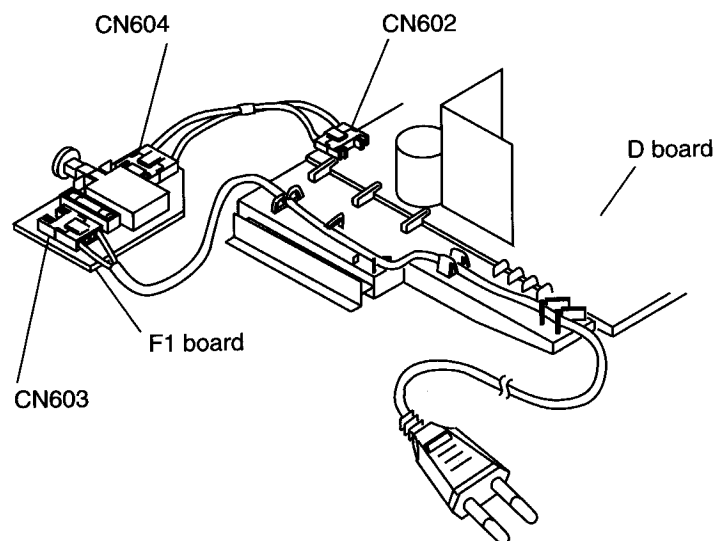
### 2-3. SPEAKER REMOVAL



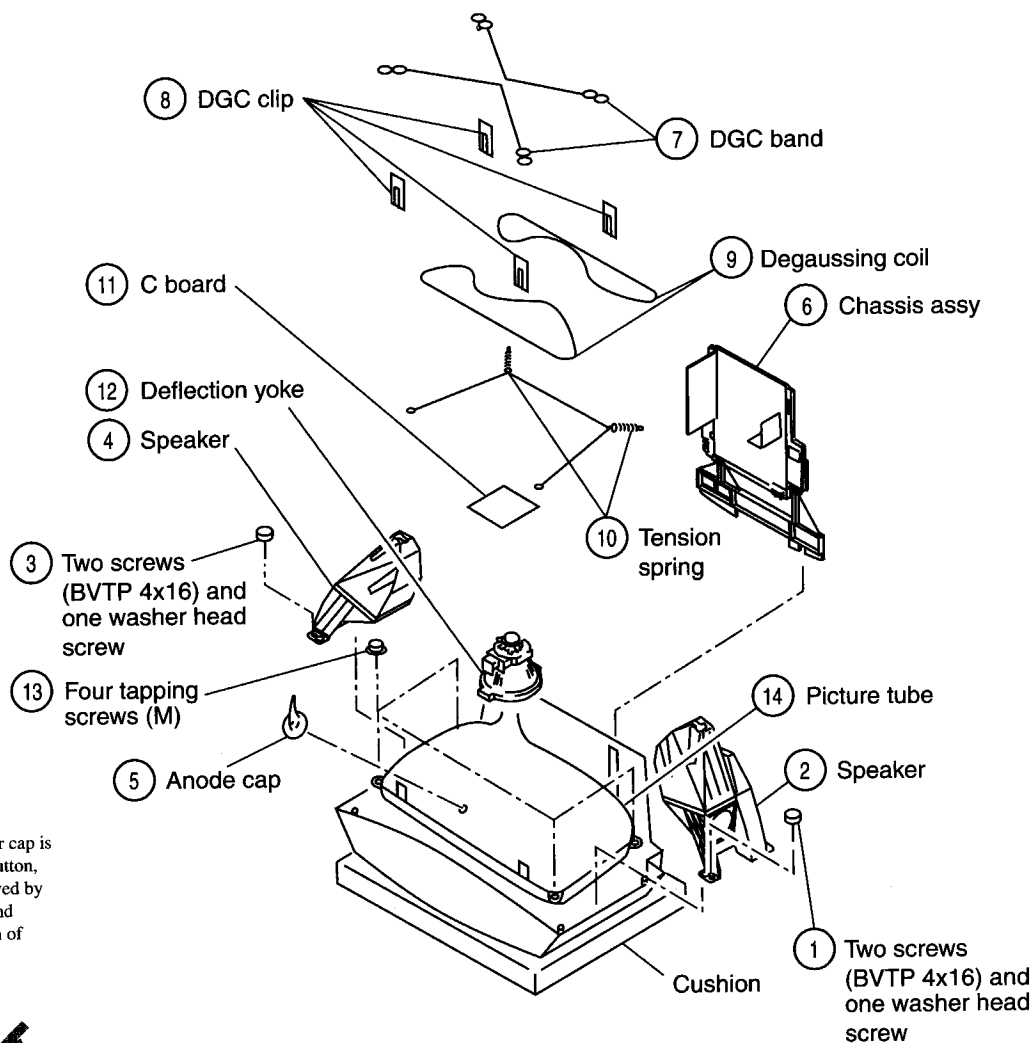
### 2-4. SERVICE POSITION



## 2-5. WIRE DRESSING



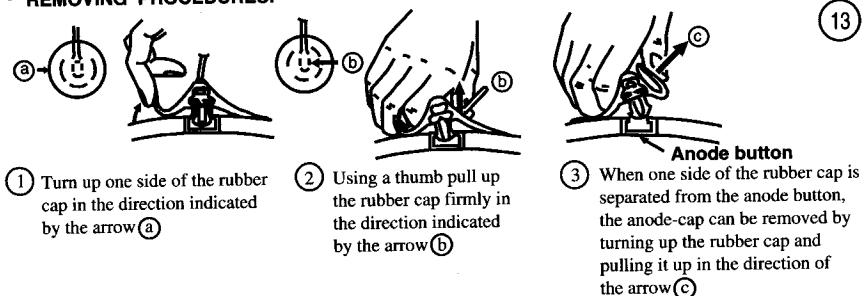
## 2-6. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

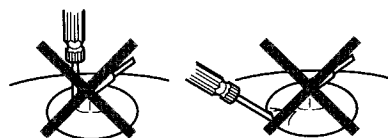
**Note :** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

#### • REMOVING PROCEDURES.



#### • HOW TO HANDLE AN ANODE-CAP

- Don't damage the surface of anode-cap with sharp shaped material !
- Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built into the rubber.
- Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or damage the rubber.





## SECTION 3

### SET - UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to these settings :

● Contrast ..... 80% (or remote control normal)  
 ☆ Brightness ..... 50%

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. Screen (G2), White balance

**Note:** Testing equipment required.

1. Colour bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

#### Preparation:

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.  
     CONTRAST } normal  
     BRIGHTNESS }
2. Set the pattern generator raster signal to red.
3. Move the deflection yoke forward and adjust with the purity control so that the red is at the centre and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
4. Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
5. Switch the raster signal to blue, then to green and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

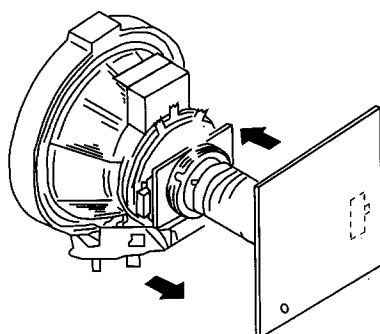


Fig. 3-1

Fig. 3-2

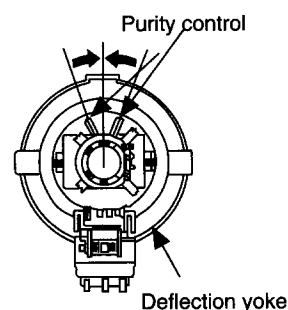


Fig. 3-3

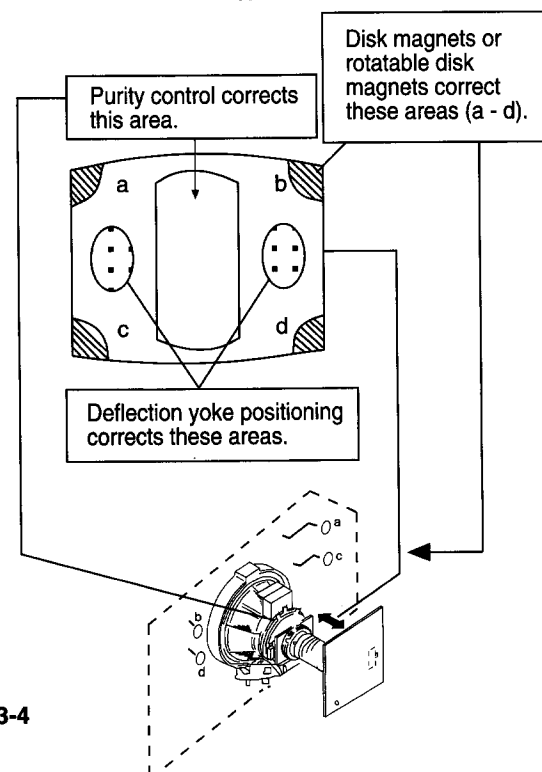
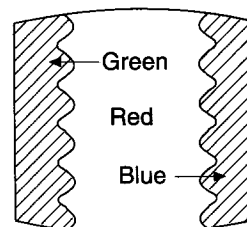


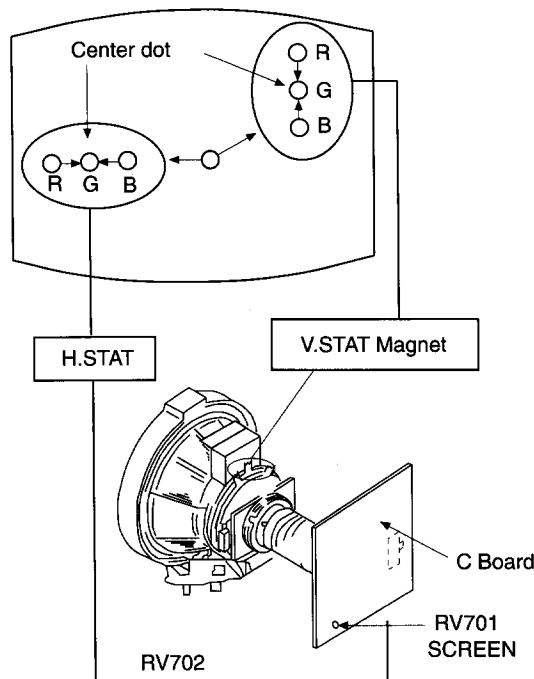
Fig. 3-4

### 3-2. CONVERGENCE

#### Preparation:

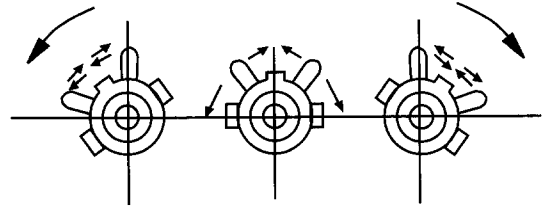
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

#### (1) Horizontal and vertical static convergence

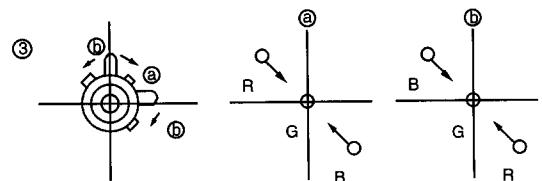
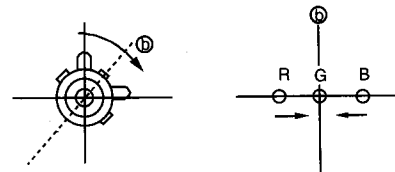
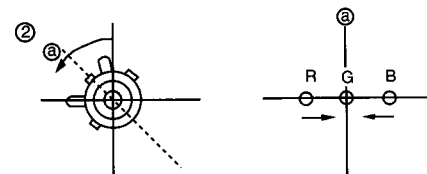
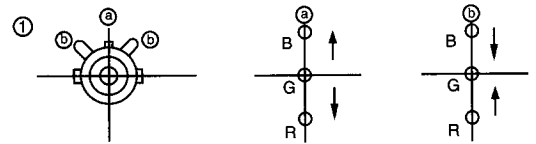


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the centre of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

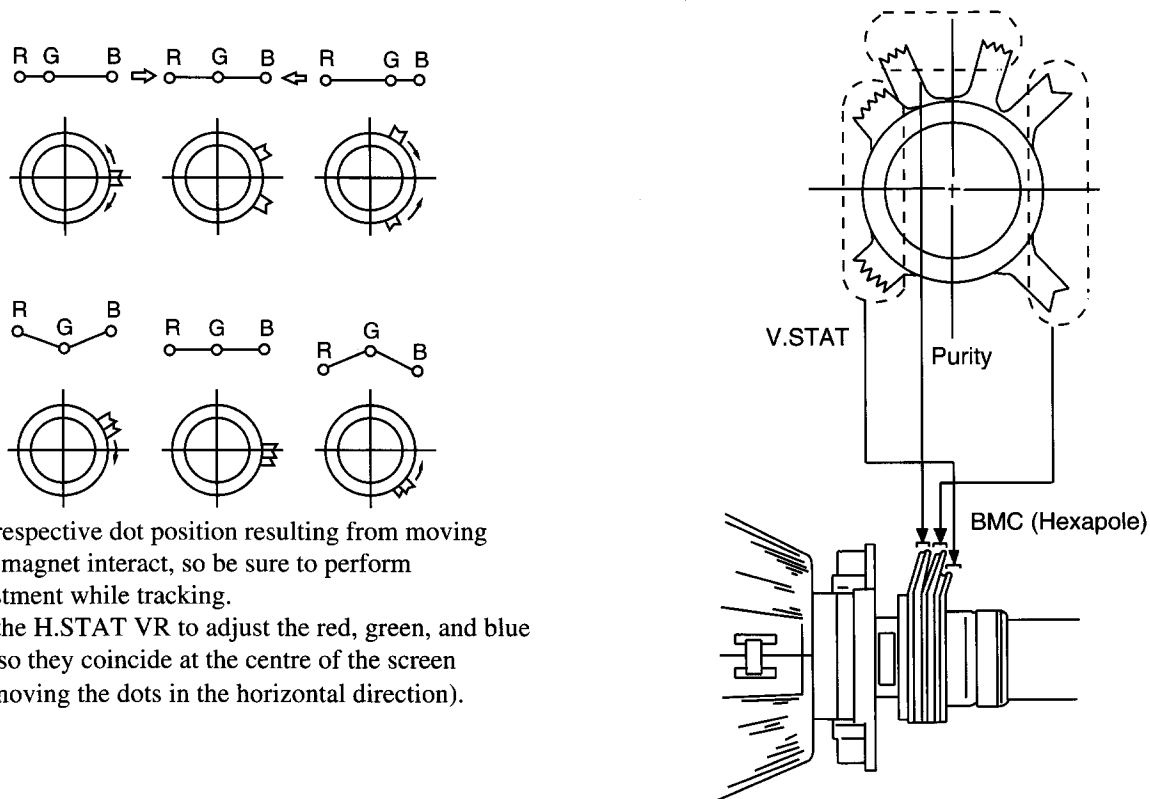
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet

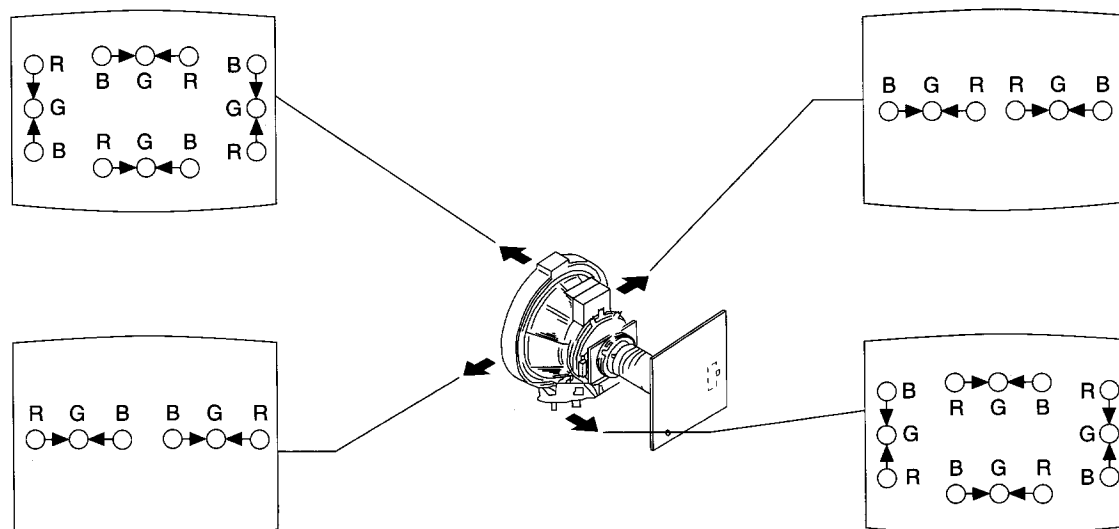


- The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.  
Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the centre of the screen (by moving the dots in the horizontal direction).

## (2) Dynamic convergence adjustment.

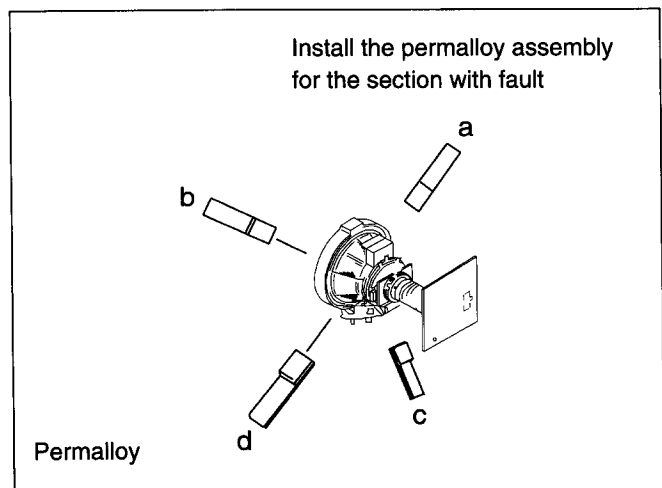
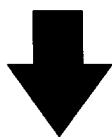
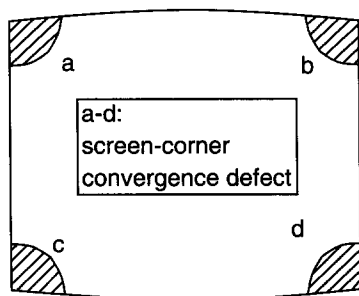
### Preparation:

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
- Slightly loosen the deflection yoke screws.
  - Remove the deflection yoke spacer.
  - Move the deflection yoke as shown in the figure below and optimize the convergence.
  - Tighten the deflection yoke screws.
  - Re-install the deflection yoke spacer.

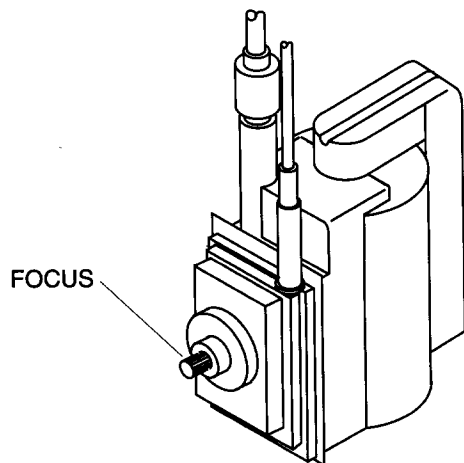


**(3) Screen corner convergence.**

If you are unable to adjust the corner convergence properly, correct them with the use of permalloy assemblies.

**3-3. FOCUS**

Adjust the focus to optimize the screen.

**3-4. SCREEN (G2), WHITE BALANCE****Screen G2 Setting**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 180V DC to the R,G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

**White balance adjustment**

1. Receive an all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" on how to enter service mode.)
3. Select TDA8366 1 on menu.

DEVICE : TDA8366 1

STAT : 12

- ☐ NEXT
- ☐ PREVIOUS
- ☐ OK

USE COLOUR KEYS  
SONY TEST MENU.

4. Press the White button on the Remote Commander to enter into the device Menu.
5. Press the Red button 10 times "Next" "Next" "Next" to select HWB RED, adjust to 32.
6. Press the Red button to select HWB GREEN, adjust with the + and - menu buttons so that the white balance becomes optimum.
7. Press the Red button to select HWB BLUE, adjust with the + and - menu buttons so that the white balance becomes optimum.
8. Press the TV button twice on the Remote Commander to store the data and return to TV operation.

## SECTION 4

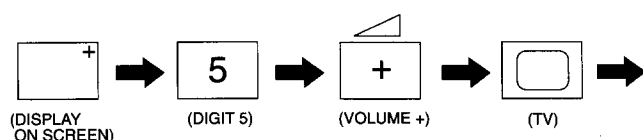
### CIRCUIT ADJUSTMENTS

#### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-837.

##### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set and enter into standby mode.
2. Press the following sequence of buttons on the Remote Commander.



“TT” will appear in the top right corner of the screen. Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.

DEVICE NAME

STAT : xxxx

☐ NEXT  
☐ PREVIOUS  
☐ OK

USE COLOUR KEYS  
SONY TEST MENU.

4. Press the Red (Next) and Green (Previous) buttons to select the device corresponding to the adjustment item from the table. Then press the White button (OK).

DEVICE NAME

00 ADJUSTMENT : xxx

☐ NEXT  
☐ PREVIOUS

SELECT COL.BUTTON  
CHANGE BY MENU +/-

5. Press the Red (Next) or Green (previous) buttons to select the adjustment item. Then press the and buttons to change the data to comply with each standard.
6. Turn off the power to quit the service mode when adjustments are completed.

Initial Conditions for setup of TDA8366, TDA6612, TDA6622 and SAA7283.

TDA8366 1	INIT VALUE	TDA8366 2	INIT VALUE
Hue	31	Interlace	00
H Shift	Adj	Sync Mode	00
H Size	Adj	Col Dec	00
Pin Amp	Adj	Vert Div	00
Corn Pin	Adj	Vid ID	00
Tilt	Adj	EHT Track	01
V.Linear	Adj	En V Grd	00
V.Size	Adj	Serv Blk	00
S.Corr	Adj	OVP Mode	00
V.Cent	Adj	Aspect R	00
HWB Red	Adj	Start Freq	00
HWB Green	Adj	Y/C Input	00
HWB Blue	Adj	PAL/NTSC	00
Peaking	8	Xtal PLL	00
Bright	32	Y Delay	07
Colour	32	RGB Blk	00
Picture	37	Noise Cor	00
AGC Set	00	Fast Blk	01
Src Sel 1	00	AFC Wind	00
Src Sel 2	00	IF Sensty	00
Time Con	03	Mod Std	00
Xtal Ind	03	Vid Mute	01
FF Freq	02		

TDA6612 (TDA6622 UK models)	INIT VALUE	TDA6612 (TDA6622 UK models)	INIT VALUE
MPX Per	00	Mute 2	01
Quasi St	00	C1/2LS	00
Bass Exp	00	C1/2KH	00
H Pulse	00	Mono	01
Matrix St	00	Scart	00
Bypass	00	Scart D	00
Vol L Sp	07	AM	00
Vol R Sp	07	SAA7283	INIT VALUE
Vol HP	00	Mon M1/M2	01
PII Sync	00	DM Select	01
Mute 3	01	SSWIT 123	07
Treble	08	Port 2	00
Bass	09	Mute Def	00
X Talk Adj	Adj	AMDIS	00
Mute 1	00	E Max	80
		E Min	01

## 4-2. TEST MODE 2 :

Is available by pressing Test button twice, OSD 'TT ' appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press 0 twice, or switch the TV into Stand-by Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Ageing Condition' (Volume min., Picture max., Brightness max.
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	"Menu" Flag request
10	Tenth entry is deleted
11	dummy
12	dummy
13	dummy
14	Forced AV 16:9 detection on/off
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM.
17	Preset Label for AV Sources
18	RGB Priority on/off
19	Clear all preset labels
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24	Set destination = U RGB Priority = Off
25	Set destination = D RGB Priority = Off
26	Set destination = B RGB Priority = On
27	Set destination = K RGB Priority = Off
28	Set destination = L RGB Priority = Off
29	Set destination = E RGB Priority = Off

30	Tenth entry is deleted.
31	Set destination = A RGB Priority = on.
32	Switch between destination DN normal mode and destination DT Turkish mode.
33	Auto AGC.
34	N/S pin adjust.
35	Manual AGC adjust.
36	dummy
37	dummy
38	28" version on/off.
39	dummy
40	Tenth entry is deleted.
41	Re-initialise NVM.
42	Production use only.
43	Initialise Geometry settings.
44	Initialise all favorite pages to be 100.
45	Channel locks off.
46	IR channel presetting mode. The channel presetting can be done by a special IR transmitter.
47	Store geometry settings for 4:3 and smart.
48	Set NVM testbyte to 44h.
49	Erase the NVM Testbyte (this byte detects already stored NVM's). After selecting this function, switch TV off and on, the NVM will be preset by the micro controller.

In Test Mode the Menu display is switchable by the Speaker-Off button.

**Note :** For Test Modes 41 - 49 it is necessary to ensure that the TV is set to Prog 59.

**SUB BRIGHTNESS ADJUSTMENT**

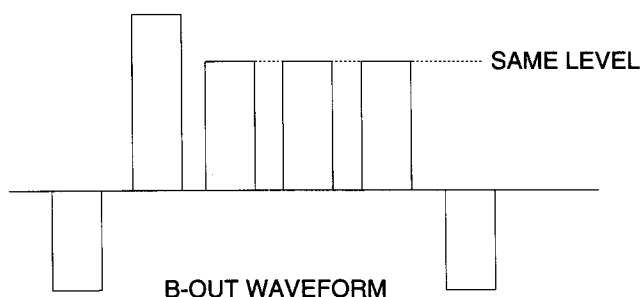
1. Input a Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of grey scale and CUT-OFF 20-IRE are only slightly visible on screen.

**SUB CONTRAST ADJUSTMENT**

1. Input a video that contains a small 100% area on a Black Background.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Connect oscilloscope to pin ① of CN703 (R OUT) and adjust HWB Red data of TDA8366 1 to obtain 2.3Vp-p.

**SUB COLOUR ADJUSTMENT**

1. Input a PAL colour bar signal.
2. Connect an oscilloscope to pin ③ of CN703 (B OUT) on the C board.
3. Enter into service mode and press 22.
4. Adjust data so that the right sides of the waveform are set to the same level.

**STEREO SEPARATION ADJUSTMENT**

1. Input a 1KHz stereo signal to the L-ch and a 400Hz stereo signal to the R-ch.
2. Enter into service mode and select the "Test Menu" to be TDA6612. (TDA6622 UK models.)
3. Select the Stereo Xtalk Adjustment Menu, by using the Red (Next) and Green (Previous) buttons.
4. Monitor the Scart 1 L-channel output and adjust the data so that the R-channel sound is not detected in the L-channel.

**I.F. COIL ADJUSTMENT (T101) - B/G, D/K, I AND L STANDARD FOR CONTINENTAL MODELS.**

1. Apply a 38.9MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

**I.F. COIL ADJUSTMENT (T101) - I, STANDARD FOR UK MODELS.**

1. Apply a 39.5MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

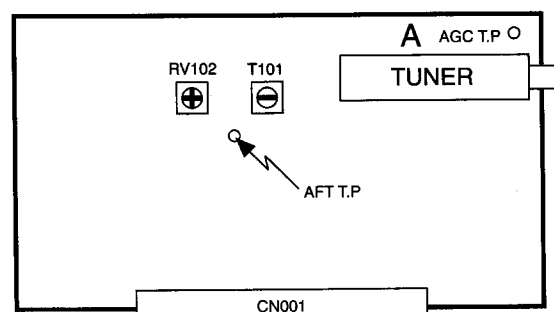
**L, BAND 1 ADJUSTMENT (RV102) - L, STANDARD FOR FRENCH MODELS.**

1. Apply a 33.95MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for positive modulation and system L band 1.
3. Measure the voltage at the AFT test point and adjust (RV102) to obtain 2.4V +/- 0.2V.

**Note :** Only adjust RV102 after T101 has been correctly adjusted.

**AGC ADJUSTMENT**

1. Receive an off- air signal.
2. Enter the service mode, ("Test" "Test") and 35.
3. Adjust the data so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



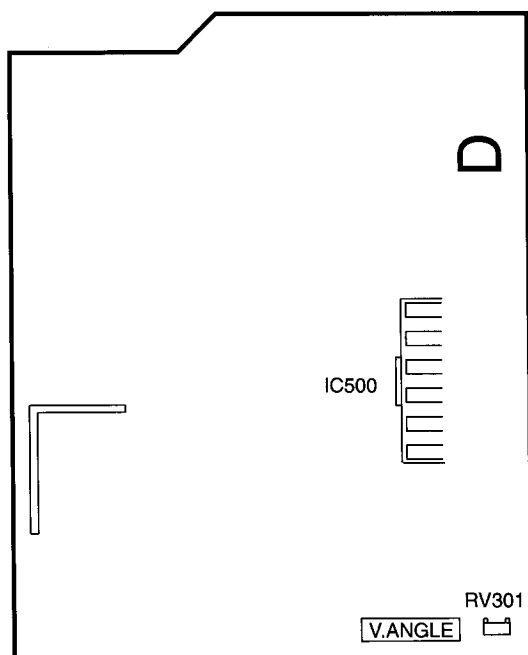
- A Board component side -

# DEFLECTION SYSTEM ADJUSTMENT

1. Enter into service mode.
2. Select and adjust each item in order to obtain the optimum image.

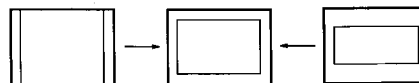
Item No	Adjustment item.	Data Amount
03	H SHIFT	ADJ.
04	H SIZE	ADJ.
05	PIN AMP	ADJ.
06	CORR PIN	ADJ.
07	TILT	ADJ.
08	V LINEAR	ADJ.
09	V SIZE	ADJ.
0A	S CORR	ADJ.
0B	V CENTRE	ADJ.

Note : V ANGLE is adjusted by a Variable Resistor on the 'D' Board (RV301)

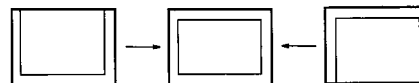


- D Board Component Side -

V SIZE



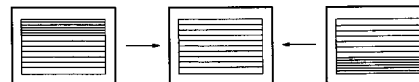
V CENTRE



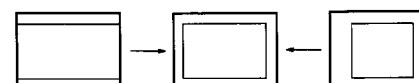
S CORR



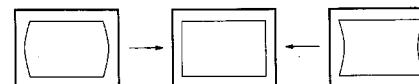
V LIN



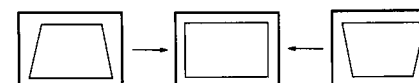
H SIZE



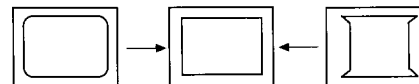
PIN AMP



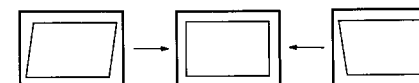
TILT



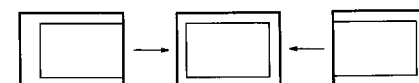
CORR PIN



V ANGLE



H SHIFT





### 4-3. BE-3B SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-3B chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the led (Series of flashes which must be counted) See Table 1, non fatal errors are reported with this method.

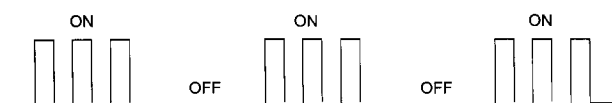
If a fatal error is found the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue operation.

**Table 1**

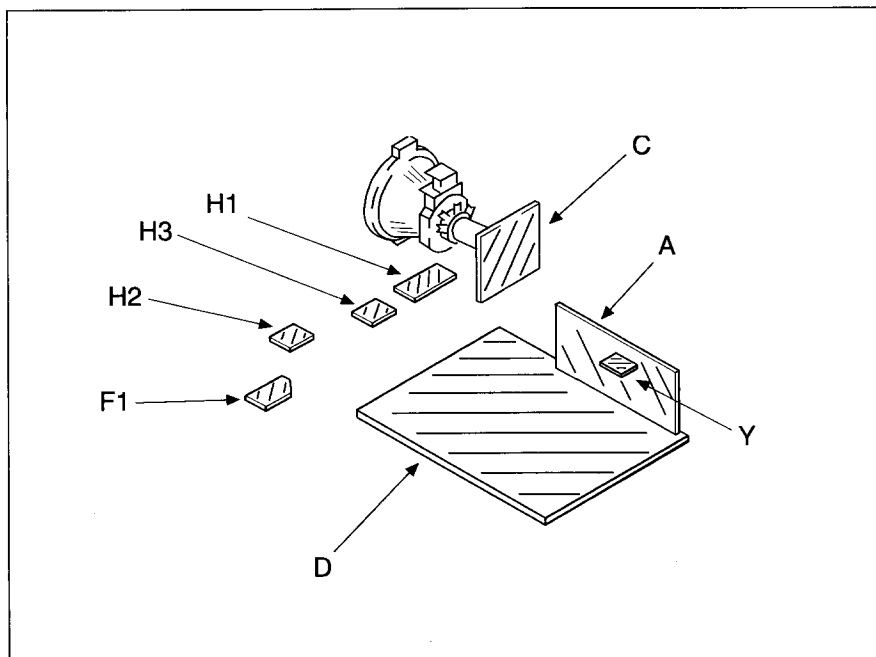
Device	LED Error Count	Fatal Error
NVM	2 .. 9	√
Teletext	10	
Jungle	11	√
Video_sw	12	
Tuner	13	√
Nicam	14	
Audio_cont	15	√

Flash Timing Example : e.g. error number 3.

Stby LED



## 5-2. CIRCUIT BOARDS LOCATION



## 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

### Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
 $\text{k}\Omega = 1000\Omega$ ,  $\text{M}\Omega = 1000\text{K}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm

Rating electrical power  $\frac{1}{4}$  W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth - ground.
- : earth - chassis.
- : no mounted.

**Note :** The components identified by shading and marked are critical for safety. Replace only with the part number specified.

**Note :** Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

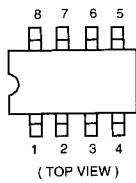
### Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	:	ADJUSTABLE RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
COIL	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE
CAPACITOR		

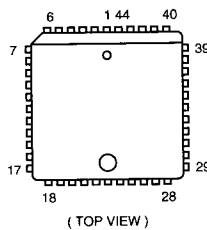
- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M $\Omega$  digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)

## 5-4. SEMICONDUCTORS

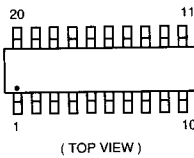
BA7046F



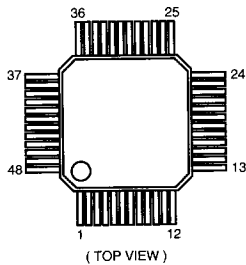
CF70200FN-R/C  
CF70203FN-F  
CF70204FN-R  
CF70211FN-R



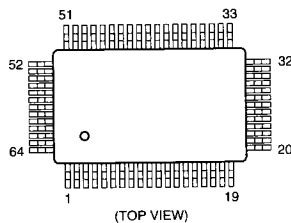
CF72416DW-R  
TDA8395T



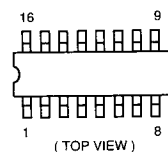
CXA1855Q



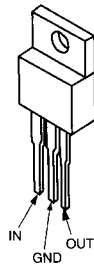
CXP85340A-116Q-TL  
CXP85340A-117Q-TL  
SAA7283  
TDA8366H/N3



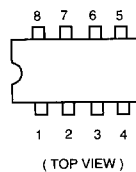
HD14053BFP  
MC14053BF  
TC74HC221AF



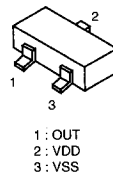
LM2940CT-5.0  
LM2940T-9.0  
MCT7812CT  
TA7812S  
 $\mu$ PC2405HF



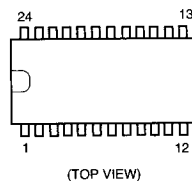
LM393P  
M5216P  
TDA2822M  
 $\mu$ PC393C



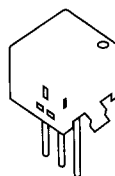
MN1382S



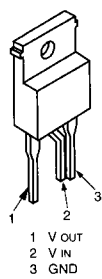
SAA4981T



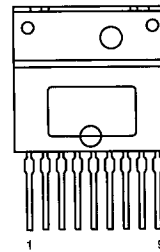
SBX1790-51



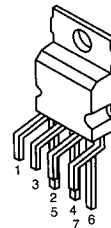
SE135N-LF12



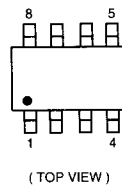
STR-S6708



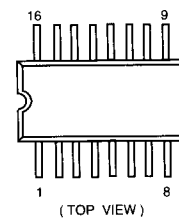
STV9379



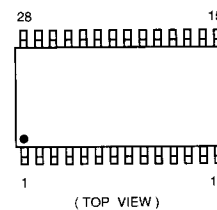
ST24E32M6



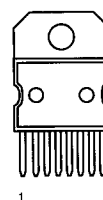
TDA4665T



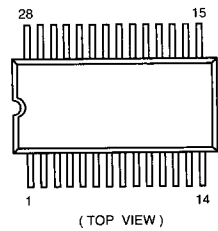
TDA6612-5X-GEG  
TDA6622-5X-GEG



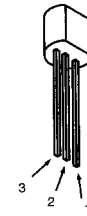
TDA7264



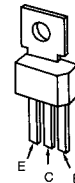
TDA9813T  
TDA9814T/V2



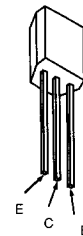
TL750L05CLPR



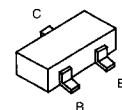
BF871



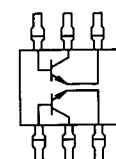
DTA144ES  
DTC114ES  
DTC143TS  
DTC144ES



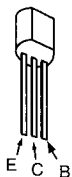
DTC114EK  
DTC123EK  
DTC144EK  
2SA1037K  
2SA1162-G  
2SC2412K



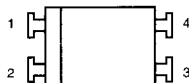
IMX1



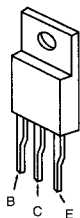
JA101  
JC501  
2SA1091-O  
2SA733-K  
2SC2389S-R  
2SC2551-O  
2SC2808S-R



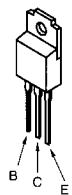
TLP721-GR



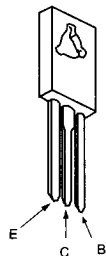
2SA1667  
2SC3852A



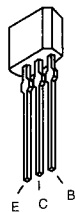
2SB1186A  
2SC4793  
2SD1763A



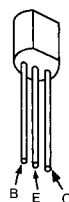
2SB1357EF  
2SC2688-LK



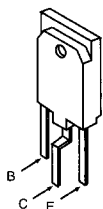
2SC2785-HFE



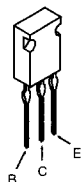
2SC3779C



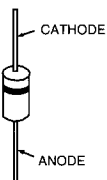
2SC4927-01



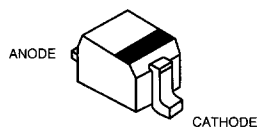
2SD2096-EF



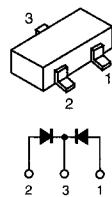
AU-01Z-V1 GP08D  
EGP20G RGP02  
EL1Z RGP10GPKG23  
EM1-V1 RGP15GPKG23  
EU-1-V1 RU3YX-LF-C4  
EU-1Z RU-3YX-V1  
FML-G12S RU4



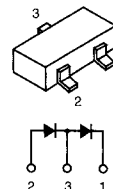
BAS216  
DTZ33B  
MA8330  
1SS355  
1SV214



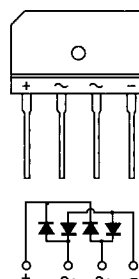
DAN202K  
UMZ12N



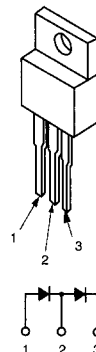
DA204K



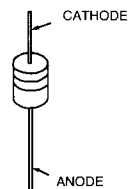
D4SB60L



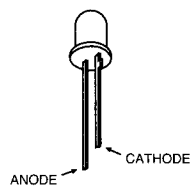
FMS-3FU



MTZJ-3.6A MTZJ-9.1C  
MTZJ-3.9B MTZJ-39C  
MTZJ-4.7B RD3.9ESB2  
MTZJ-5.1B RD5.1ESB2  
MTZJ-5.6B RD5.6ESB2  
MTZJ-6.8C RD6.8ESB2  
MTZJ-7.5C RD7.5ESB2  
MTZJ-9.1 RD9.1ESB2  
MTZJ-9.1A 1SS133

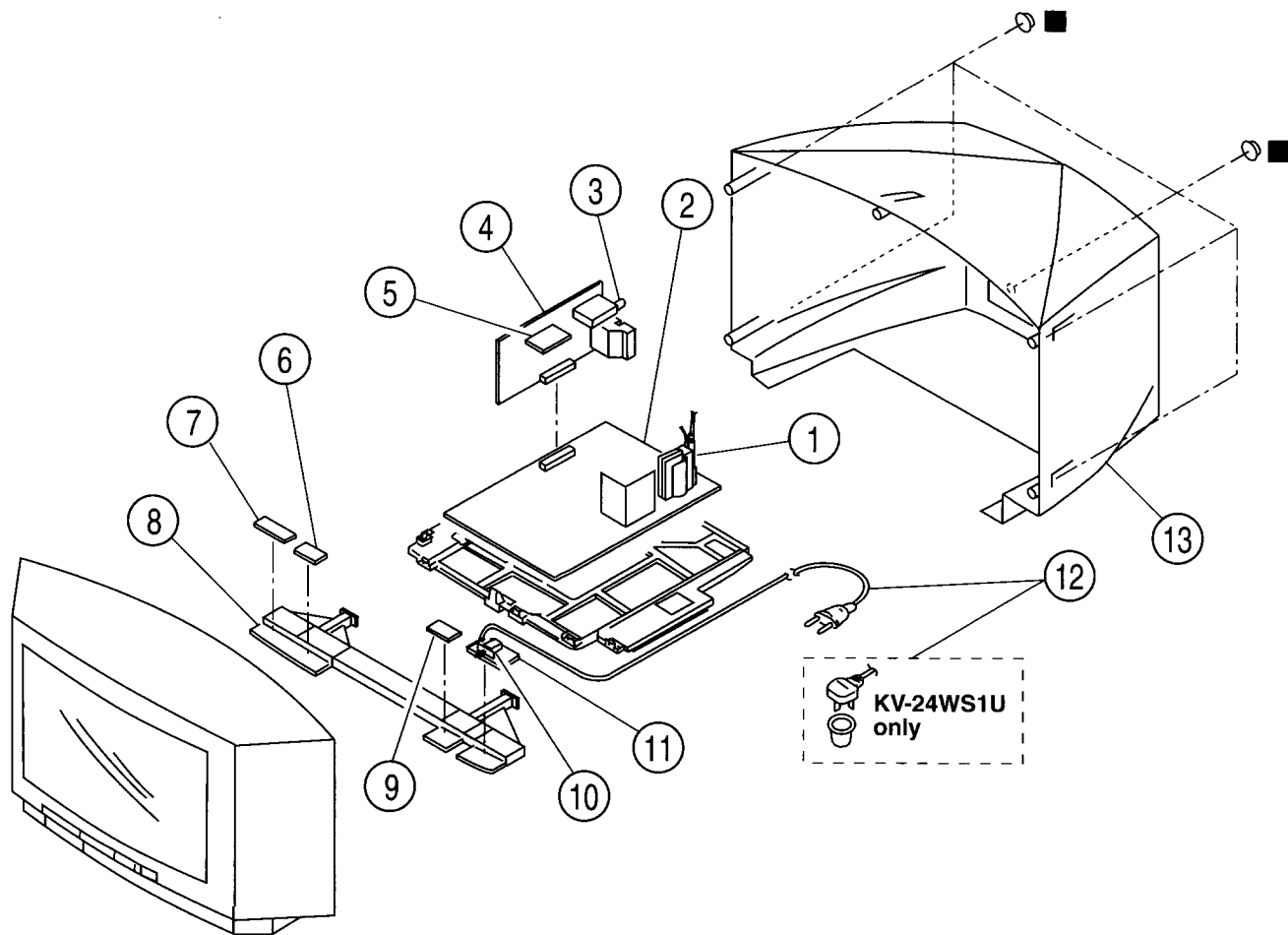


SLA-570KT3F



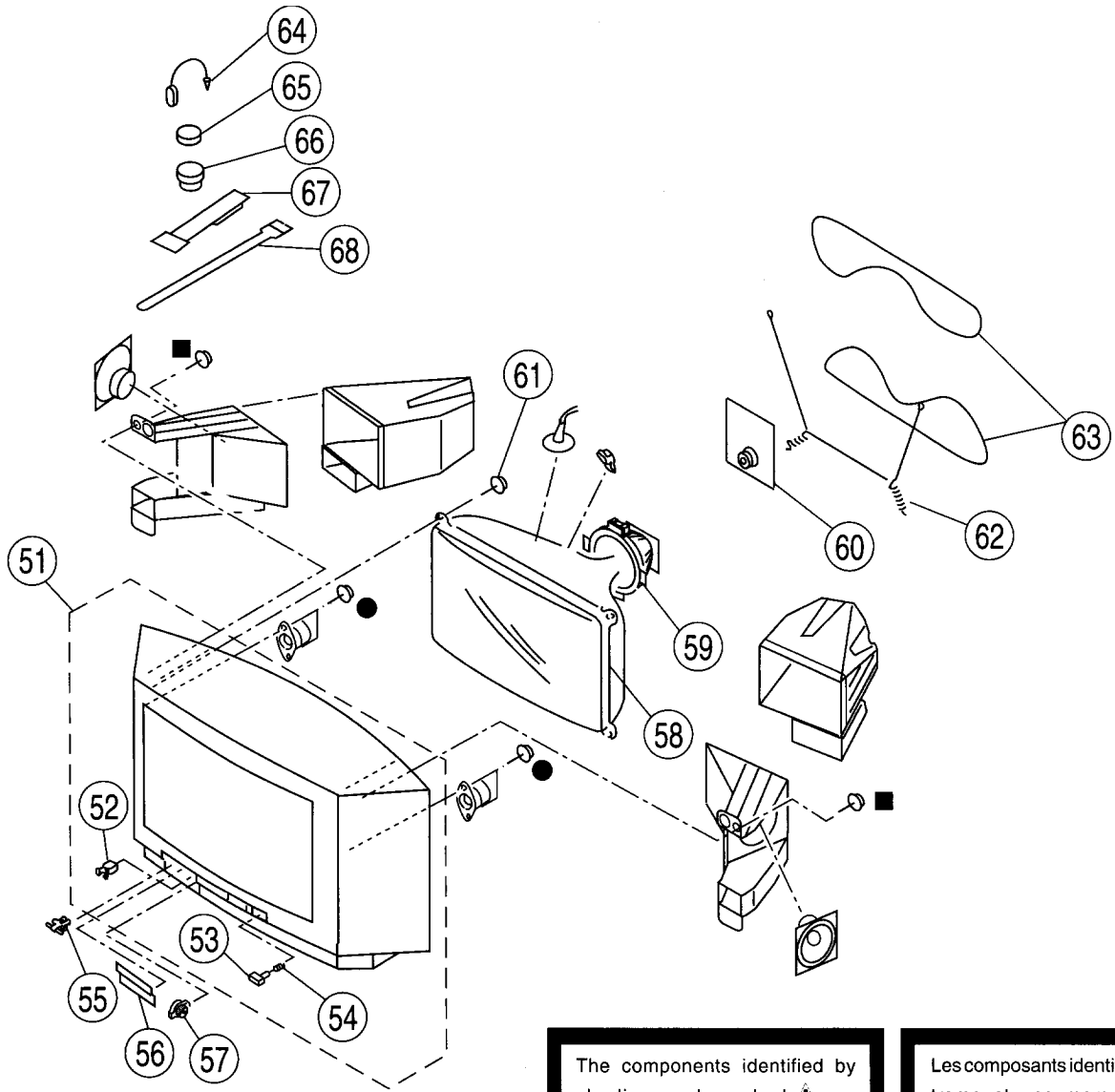
## 6-1. CHASSIS


■ : BVTP 4X16 7-685-663-79




6-2. PICTURE TUBE

- : BVTP 4X16 7-685-663-79
- : BVTP 4X8 7-685-659-71



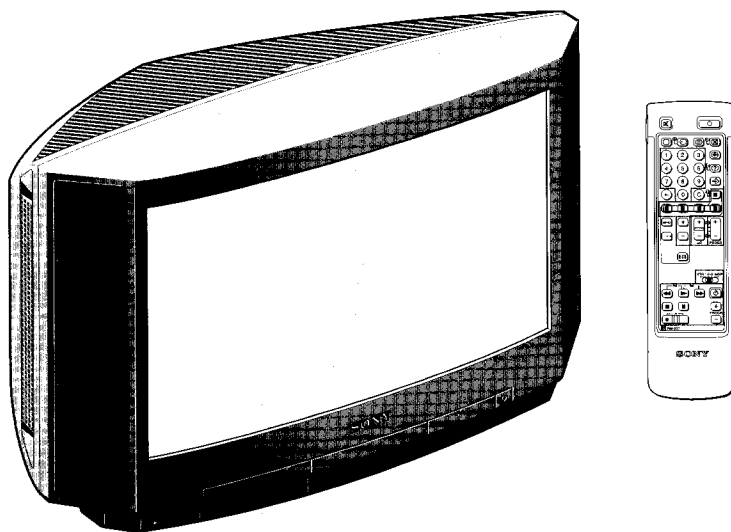
The components identified by shading and marked  are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

# SERVICE MANUAL

# BE-3B CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-28WS1A	RM-837	Italian	SCC-G81R-A	KV-28WS1K	RM-837	OIRT	SCC-G86H-A
KV-28WS1B	RM-837	French	SCC-G85P-A	KV-28WS1R	RM-837	OIRT	SCC-G86Q-A
KV-28WS1D	RM-837	AEP	SCC-G77R-A	KV-28WS1U	RM-837	UK	SCC-G87K-A
KV-28WS1E	RM-837	Spanish	SCC-G82Q-A				



TRINITRON® COLOR TV  
**SONY®**



ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
French	L, B/G/H, I	L VHF: F2-F10 UHF: F21-F69 Cable TV: B-Q B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H UHF: H1, H2 I B21-69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
Spanish	B/G/H	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
OIRT	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
UK	I	UHF: 21-69	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power Consumption	117W	117W	117W	117W	117W	169W

## SPECIFICATIONS

Picture Tube Super Trinitron Wide  
Approx. 71 cm (28 inches)  
(Approx. 67 cm picture measured diagonally)  
110° -deflection

### Rear/Front Terminals

#### [REAR]

- ① 21-pin Euro connector (CENELEC standard)
  - Input for audio and video
  - Input for RGB
  - Outputs of TV video and audio
- ② 21-pin Euro connector (CENELEC standard)
  - Input for audio and video
  - Input for S video
  - Outputs of TV video and audio (selectable)
- ③ Audio outputs (variable) - phono jacks

Sound output 2x12W RMS  
2x30W Music power  
Dimensions Approx. 798x497x531 mm  
Weight Approx. 44 kg  
Supplied accessories RM-837 Remote Commander (1)  
IEC designated batteries (2)

#### Other features

Fastext  
Toptext (KV-28WS1A/28WS1B/28WS1D/28WS1E/  
28WS1K/28WS1R)  
Nicam (KV-28WS1B/28WS1E/28WS1U)

#### [FRONT]

- ③ Video input-phono jack
- ③ Audio input-phono jacks
- ③ S video input-4-in DIN
- Ω Headphone jack : stereo mini jack




**[RM-837]**

Remote control system    infrared control  
 Power requirements      1.5V dc  
                                     1 battery IEC designation  
                                     R6 (size AA)  
 Dimensions                Approx. 65x225x21 mm (w/h/d)  
 Weight                      Approx. 157g (Not including battery)

**Design and specifications are subject to change without notice.**

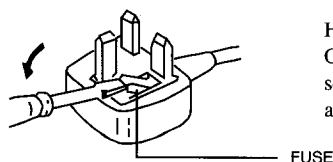
Model name Item	KV-28WS1A	KV28WS1B	KV-28WS1D	KV-28WS1E	KV-28WS1K KV-28WS1R	KV-28WS11U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON	ON	ON
Woofer Box	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	ON
Norm D/K	ON	OFF	ON	OFF	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

### WARNING ( KV-28WS1U only )

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the  mark.

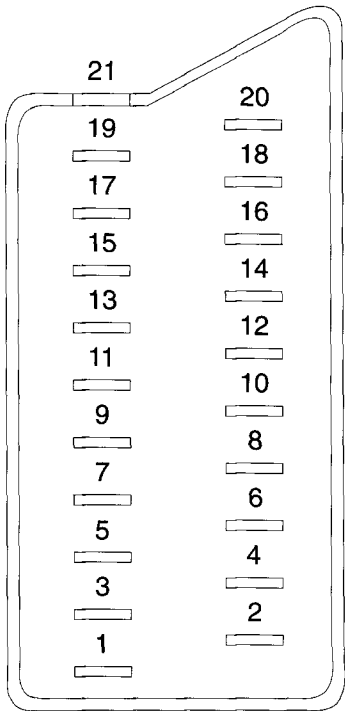
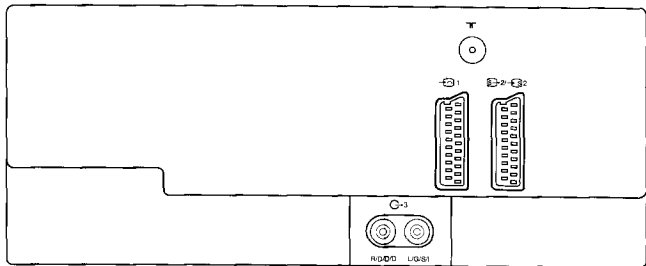
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.  
 Open the fuse compartment with the screwdriver blade and replace the fuse.

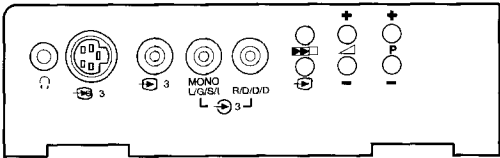
21 pin connector ( 1, 2/2 )



Pin No		Signal	Signal level
1	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance:less than 1kohm*
2	○	Audio input B (right)	Standard level:0.5Vrms Input impedance:More than 10kohms*
3	○	Audio output A (left)	Standard level:0.5Vrms Output impedance:less than 1kohm*
4	○	Ground (audio)	
5	○	Ground (blue)	
6	○	Audio input A (left)	Standard level:0.5Vrms Input impedance:More than 10kohms*
7	○	Blue input	0.7V±3dB, 75ohms, positive
8	○	Function select (AV control)	High state (9.5—12V):Part mode Low state (0—2V):TV mode Input impedance:More than 10kohms Input capacitance:Less than 2nF
9	○	Ground (green)	
10	○	Open	
11	○	Green	Green signal:0.7V±3dB. 75ohms, positive
12	○	Open	
13	○	Ground(red)	
14	●	Ground (blanking)	
15	○	Red input	0.7V±3dB, 75ohms, positive
	—	(S signal) croma input	0.3V±3dB, 75ohms, positive
16	○	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance:75ohms
17	○	Ground (video output)	
18	○	Ground (video input)	
19	○	Video output	1V±3dB, 75ohms, positive Sync:0.3V(-3, +10dB)
20	○	Video input	1V±3dB, 75ohms, positive Sync:0.3V(-3, +10dB)
	—	Video Input/Y (S signal)	1V±3dB, 75ohms, positive Sync:0.3V(-3, +10dB)
21	○	Common ground (plug, shield)	

○ Connected    ● Not Connected (open)    \* at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm , positive Sync. 0.3V -3/+10 dB
4	C (S signal) input	0.3V ± 3dB 75 ohm , positive Sync.



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**CAUTION**

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

**WARNING !!**

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.  
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.


**ATTENTION**

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

**ATTENTION !!**

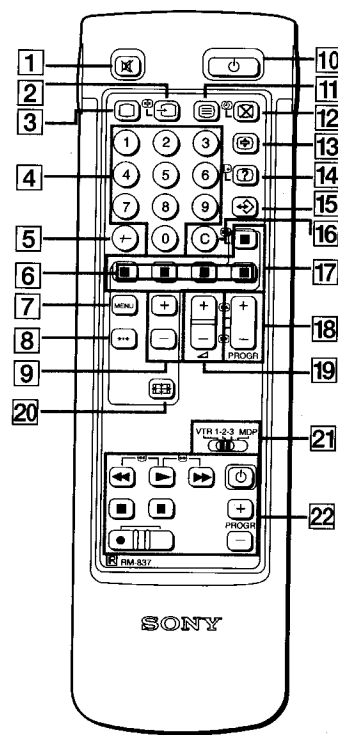
AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

**ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!**

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

## 1

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

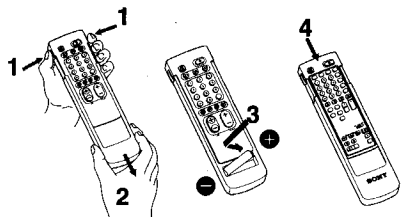


A detailed line drawing of a Sony RM-837 remote control. The remote is rectangular with rounded ends. At the top, there is a small antenna on the left (callout 1) and a power button on the right (callout 10). Below the power button are three small circular buttons: a square button (callout 3), a button with a horizontal bar and a dot (callout 11), and a button with a circle and a dot (callout 2). The center of the remote features a numeric keypad with buttons 1 through 9, 0, and two arrow buttons (callout 4). Below the keypad is a row of four square buttons (callout 5). At the bottom of the main control area are two large oval buttons, each with a '+' sign and a '-' sign (callout 6). Below these buttons are two labels: a small triangle icon (callout 19) and the word 'PROGR' (callout 18). At the very bottom of the remote, there is a small square icon followed by the text 'RM-837' and the 'SONY' logo.

### Simple Side

# Getting Started

## Inserting the Battery Into the Remote Commander



Remove the cover.

Check the correct polarity.

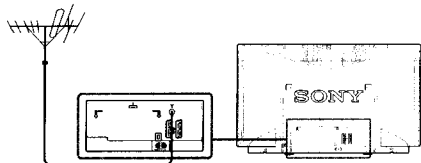
Refit the outside cover making sure that the Full Function side is visible.

## About Battery Life

Under normal operation, a battery will last up to half a year.

## Connecting the Aerial

Connect aerial to the "I" socket at the rear of the TV. (cable not supplied)



## Choosing a Language

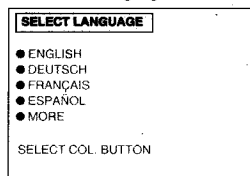
(See inside of front cover and back cover)

**1** Press **⏻** **A** on the TV.  
The TV turns on. If the standby indicator **B** on the TV is lit, press **⏻** **3** or any number button **4** on the Remote Commander.

**2** Press **MENU** **7** on the Remote Commander.  
The SELECT LANGUAGE screen appears.



**3** Press one of the colour buttons **17** on the Remote Commander to select a language (Press the white button **17** to display other language alternatives). The SELECT LANGUAGE screen clears and all subsequent menus appear in the chosen language.



**Note:** From the second time you turn on the TV, the MENU screen appears instead of the SELECT LANGUAGE screen. Press the yellow button **17** then press the white button **17** to redisplay the SELECT LANGUAGE screen.

## Tuning in to Channels

You can tune in up to 100 channels to programme positions either automatically or manually.

**auto tuning:** A single button press allows all receivable channels to be tuned. Use if you are unfamiliar with the channel numbers of stations.

**manual tuning:** Use if you are familiar with the channel numbers of stations.

Choose the more appropriate way for you.

## Tuning in to Channels Automatically

There are two possibilities for auto tuning;

**A.** On the TV: hold down **⏻** **E** on the front of the TV for 2 seconds  
(All receivable channels are tuned in the order noted below).

or  
**B.** On the Remote Commander: as follows

**1** Press **MENU** **7**.

**2** Press the white button **17**.

**3** Hold down the red button **17** for 2 seconds,

**Note:** Press the green button **17** to cancel.

Channels are automatically stored as follows:

Programme 1	BBC1
Programme 2	BBC2
Programme 3	ITV
Programme 4	CH4 or S4C

**Note:** Programme names are automatically taken from TELETEXT if available. If not, "----" is placed in the name.

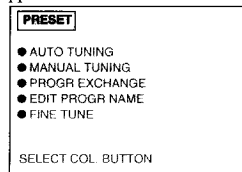
- If you connect a VCR via the aerial cable, set the VCR to its test signal or play mode before auto-tuning.
- You may have to exchange the programme positions, if there are duplicated signals from local transmitters.

## Tuning in to Channels Manually

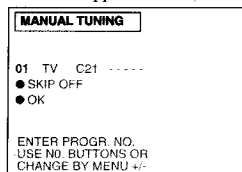
**1** Press **MENU** **7**.  
The MENU screen appears.



**2** Press the white button **17** to select PRESET.  
The PRESET screen appears.



**3** Press the green button **17** to select MANUAL TUNING.  
The MANUAL TUNING screen appears.

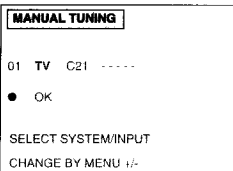


**4** Press the number buttons **4** or **MENU +/-** **9** to select a programme position.  
If you use the number buttons **4**, enter a double-digit number. (e.g. for programme number 4, first press 0, then 4)

**5** Press the green button **17**.

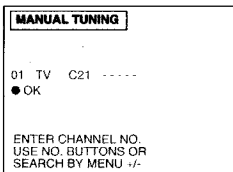
**Note:** Use **MENU +/-** **9** to select "TV". You can alternatively select input sources which may be assigned to programme positions. The display changes as follows:

TV ↔ AV1 ↔ RGB ↔ AV2 ↔ YC2 ↔ AV3 ↔ YC3



**6** Press the green button **17**.

**Note:** If a video input source is selected in step 5, this is now stored. Refer to step 4 to tune other programme positions.



**7** Press the number buttons **4** or **MENU +/-** **9** to select the channel number.  
If you use the number buttons **4**, enter a double-digit number. (e.g. for channel 23, first press 2, then 3)

**Note:** Programme names are automatically taken from TELETEXT if available. If not, "----" is placed in the name. Or if you select AV1, RGB, AV2, YC2, AV3 or YC3 as an input source, AV1, RGB, ... is placed.

**8** Press the green button **17** to store.

**Note:** If you want to preset other channels, repeat steps 4 to 8.

**9** Press **MENU** **7** twice to return to the normal screen.

**Note:** You can skip unused programme positions when selecting programmes with the **PROGR +/-** buttons **18**. Press the red button **17** to skip in step 4. However, the skipped programmes may still be called up when you use the number buttons.

## Basic TV Operations

### Turning the TV on and off

#### Turning on

Depress **⏻** **A** on the TV.

#### Turning off temporarily

Press **⏻** **10** on the Remote Commander.

The TV enters standby mode and the standby indicator **B** on the front of the TV lights up.

#### Turning on again

Press **⏻** **3**, **PROGR +/-** **18**, or one of the number buttons **4** on the Remote Commander.

#### Turning off completely

Depress **⏻** **A** on the TV.

**Note:** It is recommended to use **⏻** **A** to turn off the TV. This could help you save energy.

### Selecting TV Programmes

Press **PROGR +/-** **18** or press number buttons **4**.

#### To select a double-digit number

Press **-/-** **5**, then the number buttons **4**.

### Adjusting the Volume

Press **⏻** **19**.

### Muting the Sound

Press **⏻** **1**.

To resume normal sound, press **⏻** **1** again.

### Displaying the On-screen Indications

Press **⏻** **14** once to display the on-screen indications.

Press again to make the indications disappear.

**Note:** If NICAM is transmitted regardless of whether it is stereo or mono, the two speakers symbol automatically appears on the screen for several seconds.

### Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can adjust or select the functions as follows:

Press **⏻** **19** **D** to adjust the volume.

Press **P +/-** **C** to select programme numbers or to turn the TV on from the standby mode.

Press **⏻** **F** to select the input source.

Press **⏻** **E** to preset channels automatically.

# Advanced TV Operations

## Operating the Menu System

You can adjust picture and sound, preset channels to programme positions and utilise other convenient features by using the following menu system.

## Adjusting the Picture and Sound

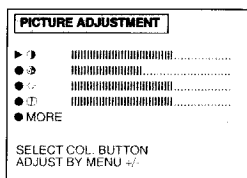
Although picture and sound are adjusted at the factory you can adjust them to suit your own taste.

- 1 Press **MENU** [7].  
The MENU screen appears.
- 2 Press the red button [17] to select PICTURE or the green button [17] to select SOUND.
- 3 Press the respective colour button [17] to select an item.
- 4 Press **MENU** +/- [9] to adjust.
- 5 Press **MENU** [7] twice or wait until the menu displays disappear automatically to return to the normal screen.

**Note:** When selecting menus, the picture becomes darker. If, however, an item in the PICTURE ADJUSTMENT menu is selected, normal level of TV picture is restored to allow the best adjustment.

## PICTURE ADJUSTMENT

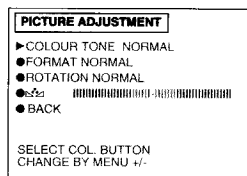
(First Page)



Press colour button	Effect
<b>Red:</b> For Picture [1]	Less ——— More
<b>Green:</b> For Colour [2]	Less ——— More
<b>Yellow:</b> For Brightness [3]	Darker ——— Brighter
<b>Blue:</b> For Sharpness [4]	Softer ——— Sharper
<b>White:</b>	Next page of PICTURE ADJUSTMENT

## PICTURE ADJUSTMENT

(Second Page)

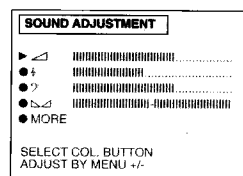


Press colour button	Effect
<b>Red:</b> For Colour Tone	Normal -> Warm (reddish colour tone) -> Cool (blueish colour tone)
<b>Green:</b> For Format	Using [4:3] select mode: 4:3 for normal ratio 4:3 Smart for imitation of wide screen effect (16:9) for 4:3 broadcasts Wide for 16:9 broadcasts Zoom for imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format Zoom [up] (for scroll-up of screen to show sub-title) Whilst in zoom mode, press <b>MENU</b> +/- [9] to select Zoom [up]. Press <b>MENU</b> +/- [9] again to return to zoom mode
<b>Yellow:</b> For Picture Rotation	Normal: Normal setting -5 ~ +5: Adjusts the picture slant caused by the earth magnetism
<b>Blue:</b> For Hue control [NTSC] (only for NTSC video signals)	Reddish ——— Greenish
<b>White:</b>	Back to first page of PICTURE ADJUSTMENT

**Note:** Press [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

## SOUND ADJUSTMENT

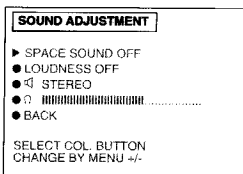
(First Page)



Press colour button	Effect
<b>Red:</b> for Volume [1]	Less ——— More
<b>Green:</b> for Treble [2]	Less ——— More
<b>Yellow:</b> for Bass [3]	Less ——— More
<b>Blue:</b> for Balance [4]	More left - more right
<b>White:</b>	Next page of SOUND ADJUSTMENT

## SOUND ADJUSTMENT

(Second Page)



Press colour button	Effect
<b>Red:</b> for Space Sound	OFF: normal sound ON: for a special acoustic sound effect
<b>Green:</b> for Loudness	OFF: normal sounds ON: when listening to music broadcast
<b>Yellow:</b> for Stereo:	Stereo -> Mono A (left channel) -> Mono B (right channel) -> Mono
<b>Blue:</b> for [Headphone] volume:	Less ——— More
<b>White:</b>	Back to first page of SOUND ADJUSTMENT

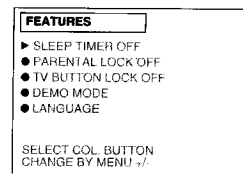
**Note:** Press [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

## Using Special Features

With your TV you can utilise special features such as Parental Lock or Sleep Timer.

- 1 Press **MENU** [7].  
The MENU screen appears.
- 2 Press the yellow button [17] to select FEATURES.
- 3 Press the respective colour button [17] to select an item.
- 4 Press **MENU** +/- [9] to change.
- 5 Press **MENU** [7] twice or wait until the menu displays disappear automatically to return to the normal screen.

## FEATURES



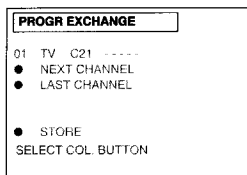
Press colour button	Effect
<b>Red:</b> for Sleep Timer	OFF -> 0:30 -> 1:00 -> 1:30 -> 2:00 (hours) After the selected time the TV set switches itself automatically into standby mode.
<b>Green:</b> for Parental Lock (For preventing children from watching programmes which you consider unsuitable)	OFF: Normal setting ON: The TV-channel you are watching is now blocked. In this way you can prevent undesirable broadcasts from appearing on the screen.
<b>Yellow:</b> for TV Button Lock	OFF: Normal setting ON: The buttons on the TV do not function anymore. (The Remote Commander still operates)
<b>Blue:</b> for Demo Mode	ON: A sequence of menu pictures is displayed. Press any button on the Remote Commander to stop the function.
<b>White:</b> for Language	The SELECT LANGUAGE screen appears.

## Advanced Presetting Functions

### Exchanging Programme Positions

You can exchange the programme positions to a preferred order (example: exchange programme 09 (channel C21) with programme 15 (channel C24)).

- 1 Press **MENU** [7].  
The MENU screen appears.
- 2 Press the white button [17].  
The PRESET screen appears.
- 3 Press the yellow button [17].  
The PROGR EXCHANGE screen appears.

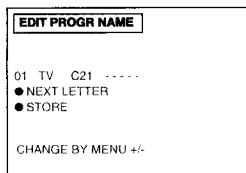


- 4 Press the white button [17] repeatedly until the desired programme number (09) appears.
- 5 Press the red or the green button [17] repeatedly until the desired channel number (C24) appears.
- 6 Press the white button [17] to store.  
Now the exchange has been completed. Channel C24 is tuned in to programme 09 and channel C21 is tuned in to programme 15.
- 7 Press **MENU** [7] twice to return to the normal screen.

### Editing Programme Names

You can edit the programme names up to five letters.

- 1 Press **MENU** [7].  
The MENU screen appears.
- 2 Press the white button [17].  
The PRESET screen appears.
- 3 Press the blue button [17].  
The EDIT PROGR NAME screen appears.  
The first character flashes.



- 4 Press **MENU** +/- [9] to edit the first letter.  
The first letter changes as follows;

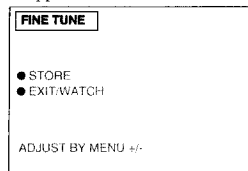
A ↔ B ↔ ... ↔ Z ↔ 0 ↔ 1 ↔ ... ↔ 9 ↔ "-" (space)

- 5 Press the red button [17] to move to the next letter.
- 6 Repeat steps 4 to 5, until the fifth letter is chosen.
- 7 Press the green button [17].  
The programme name is stored, and the normal screen appears. To edit another programme name, repeat steps 1 to 7.

### Fine Tuning

You can adjust the receiving condition by the FINE TUNE function.

- 1 Press **MENU** [7].  
The MENU screen appears.
- 2 Press the white button [17].  
The PRESET screen appears.
- 3 Press the white button [17] again.  
The FINE TUNE screen appears.



- 4 Press **MENU** +/- [9] to adjust the receiving condition.
- 5 Press the red button [17] to store the adjustment, or press the green button [17] not to store.  
Then the normal screen appears. If you have pressed the green button, the fine tuned condition is cancelled once you choose another programme.

### Tuning in to a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset.

- 1 Press **C** [16] on the Remote Commander.  
The indication "C" appears on the screen.
- 2 Enter a double-digit channel number using the number buttons (e.g. for channel 23, first press 2, then 3).  
The channel appears.  
However, the channel is not stored.

## Teletext Operation

TV stations broadcast teletext programmes via the TV channels. For basic operation of teletext, use the simple side of the Remote Commander. For the advanced features of teletext, use the buttons indicated in green on the full function side of the Remote Commander.

### Basic Teletext Operation

#### Switching Teletext on and off

- 1 Select the channel which carries the teletext service you wish to view.
- 2 Press **Ⓜ** [11] to display Teletext.  
If no teletext signal is broadcast, the indication P100 is displayed on a black screen.



- 3 Input three digits for the page number using the number buttons [4].  
The numbers are displayed on the screen and the requested page appears in a few seconds.  
**Note:** If you make a mistake, type in any three digits, then re-enter the correct page number.

- 4 Press **Ⓜ** [3] once or **Ⓜ** [11] twice to return to the TV mode.

**Note:** To change the teletext channels. First press **Ⓜ** [3] to return to the TV mode, then repeat steps 1 to 3.

**Note:** If the signal of a TV channel is weak, teletext errors may occur.

### Advanced Teletext Operation

#### Using Fastext

With Fastext you can access pages with one button press. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons [6] on the Remote Commander. Press the corresponding colour button [6] on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed in a few seconds.

#### Requesting the Index page

Press **Ⓜ** [17]. The Index page appears.

#### Accessing the next or preceding page

Press **Ⓜ** (PAGE +) or **Ⓜ** (PAGE -) [18]. The next or the preceding page appears on the screen.

#### Superimposing the teletext display on the TV picture

Press **Ⓜ** [11] once if you are in text mode or press **Ⓜ** [11] twice if in TV mode.

To return to the normal teletext display press **Ⓜ** [11] twice.



#### Preventing a teletext page from being updated or changed

Press **Ⓜ** (HOLD) [2]. The HOLD symbol (Ⓜ) appears on the screen and the selected subpage is held until you press **Ⓜ** [11] to cancel.

### Enlarging the teletext display

Press **Ⓜ** [13] once to enlarge the upper half. Press twice to enlarge the lower half. Press again to restore the normal display.



### Revealing concealed information (e.g. answers to a quiz)

Press **Ⓜ** (REVEAL) [14]. The information is revealed. Press **Ⓜ** [14] again to conceal the information.

### Watching TV while waiting for a requested page to be displayed

- 1 Request a new teletext page.
- 2 Press **Ⓜ** (TEXT CL) [12].  
The TV programme is displayed and the symbol **Ⓜ** is displayed at the top of the page.  
**Note:** When the requested page is available the page number is displayed at the top of the screen.

- 3 Press **Ⓜ** [11] to view the page.

**Note:** To cancel the request Display the teletext page, then press **Ⓜ** [11]. The request is now cancelled. Press **Ⓜ** [3] to resume TV mode.

### Using the Favourite Page system

You can store up to four of your favourite teletext pages per programme with the help of the Favourite page system. In this way you have quick access to the pages you watch frequently.

### Storing the Favourite Pages

- 1 Select the page you would like to store using the number buttons [4].
- 2 Press **Ⓜ** [15] twice.  
The colour prompts at the bottom of the screen flash.
- 3 Press any of the colour buttons [6] on the Remote Commander to store the selected page.  
The page is now stored on this button.

Repeat steps 1 to 3 for the other 3 pages available.

### Displaying the Favourite pages

- 1 Press **Ⓜ** [15].
- 2 Press the colour button [6] corresponding to the colour prompt onto which the desired page is stored.  
The page is requested. (It may take a few seconds to be received).

**Note:** Step 1 must be taken before every favourite page selection, otherwise the normal Fastext facility operates.

### Using the Time Function in the TV mode

Press **Ⓜ** [12] to request the time. Press again to cancel the request.

**Note:** This function is available only when teletext is broadcast.

## Connecting Other Equipment

You can connect optional audio/video equipment to this TV such as VCRs, video disc players, cameras, external speakers or stereo systems.

Connector	Acceptable input signal	Available output signal
AV1 (RGB)	Audio/video and RGB signal	Audio/video signal from TV Tuner
AV2 (YC2)	Audio/video and S video signal	Audio/video signal from selected source
AV3	Audio/video signal and	No outputs
AV3	Audio/S video signal	
R/D/D/L/C/S/I	No inputs	Audio signal (variable)

To watch a video input picture, press **2** until the desired video input appears.

To return to the normal TV picture, press **2** repeatedly or press **3**.

**Note:** If you have a decoder, connect it to **AV1**.

### Connecting a VCR Using the TV Aerial Terminal

Connect the aerial output of the VCR to the aerial terminal **K** of the TV. It is recommended to tune in the VCR signal to programme number "0". For details, see "Tuning in to Channels Manually" on page 6.

**Note:** S video input (Y/C input) **1** **L**

Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals. Separating the Y and C signals prevents them from interfering with each other and therefore improves the picture quality (especially luminance). This TV is equipped with 2 video input terminals through which these signals can be input directly.

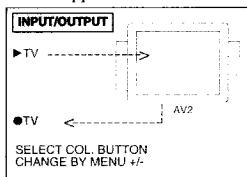
## Checking and Selecting the Input and Output Sources Using the Menu

You can display a menu screen to see which input and output source are selected. You can also change the selection using this menu.

### Checking the Input and Output Sources

**1** Press **MENU** **7**.  
The MENU screen appears

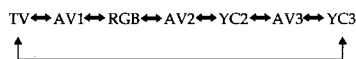
**2** Press the blue button **17** to select INPUT/OUTPUT.  
The INPUT/OUTPUT screen appears.



### Selecting an Input Signal

Press the red button **17** to select INPUT. Press **MENU +/-** **9** to select the desired input source.

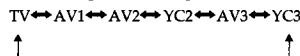
You can select among the following sources:



### Selecting an Output Signal

The **2** / **3** connector **L** outputs the source input from the other connectors. Press the green button **17** to select OUTPUT. Press **MENU +/-** **9** to select the desired output source.

You can select among the following sources:



**Note:** Press **MENU** **7** twice or wait until the menu displays disappear automatically to return to the normal screen.

## Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most Sony remote-controlled video equipment such as: Beta, 8mm or VHS VCRs or video disc players.

### Tuning the Remote Commander to the equipment

**1** Set the VTR 1/2/3 MDP selector **21** according to the equipment you want to control:

- VTR 1: Beta or VCR
- VTR 2: 8mm VCR
- VTR 3: VHS VCR
- MDP: Video Disc Player

**2** Use the buttons **22** to operate the additional equipment.

**Note:** If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.

**Note:** If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

**Note:** When you use the **•** (record) button, make sure to press this button and the one to the right of it simultaneously.

### Using Headphones

You can utilise headphones. Connect them to the headphone jack **1** to mute the sound from the speakers.

**Note:** You cannot control the sound adjustment except for volume.

## For your information

### Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

#### No picture (screen is dark), no sound

- Plug the TV in.
- Press **0** **A** on the TV. (If the standby indicator **B** is lit, press **0** **3** or any number button **4** on the Remote Commander.)
- Check if the selected video source is on.
- Turn the TV off for three or four seconds and then turn it on again using **0** **A**.

#### Poor or no picture (screen is dark), but good sound

- Press **MENU** **7** to enter the MENU screen, and press the red button **17**, then adjust **0** and **0**.

#### Good picture but no sound

- Press **1** **9**.
- If **•** is displayed on the screen, press **•** **1**.

#### No colour for colour programmes

- Press **MENU** **7** to enter the MENU screen, and press the red button **17**, then adjust **3**.

#### Remote Commander does not function

- Replace the battery.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

### Specifications

Television system	I
Colour system	PAL NTSC 3.58 (video input only) NTSC 4.43 (video input only)
Channel coverage	UHF 21-69
Picture tube	Super Trinitron Wide Approx. 71cm (28 inches) (Approx. 67cm picture measured diagonally) 110° deflection
Terminals	<b>AV1</b> 21-pin Euro connector (CENELEC standard) - inputs for audio and video - inputs for RGB - outputs of TV video and audio <b>AV2</b> 21-pin Euro connector - inputs for audio and video - inputs for S video - outputs for audio and video (selectable) <b>AV3</b> Audio outputs (variable) – phono jacks
Rear	
Front	<b>AV3</b> Video input-phono jack <b>AV3</b> Audio input-phono jacks <b>AV3</b> S video input-4-pin DIN <b>1</b> Headphone jack: stereo mini jack

Sound output 2x12W RMS  
2x30W music power

Power consumption 169W

Dimension (WxHxD) Approx. 798x497x531mm

Weight Approx 44kg

Supplied accessories Remote Commander RM-837,  
Battery R6

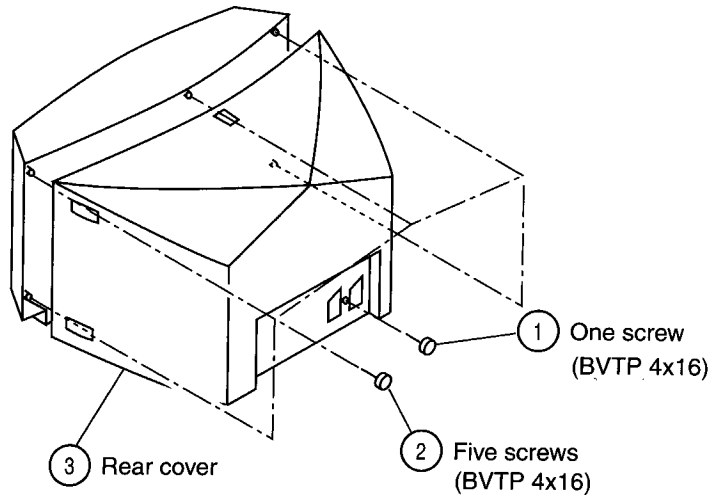
Other features Fastext/NICAM

Design and specifications are subject to change without notice.

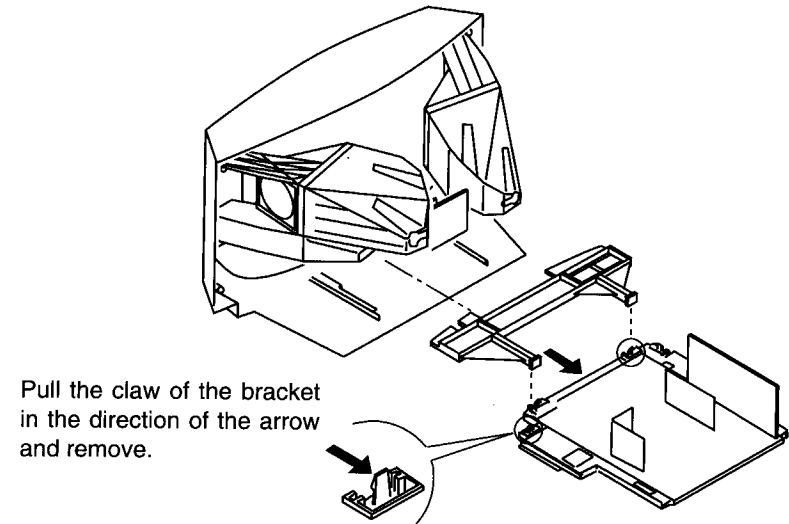


## SECTION 2 DISASSEMBLY

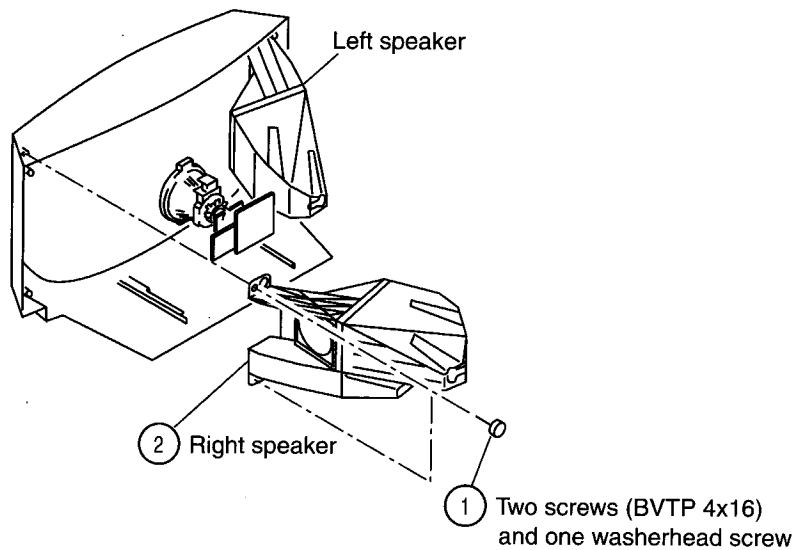
### 2-1. REAR COVER REMOVAL



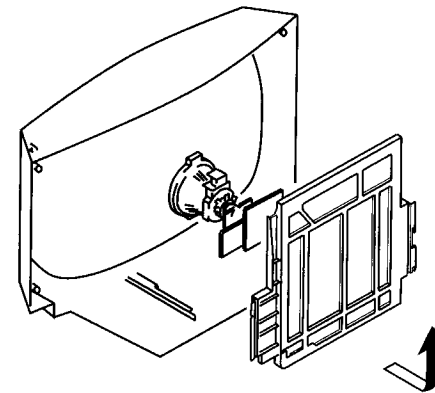
### 2-2. CHASSIS ASSY AND H BRACKET REMOVAL



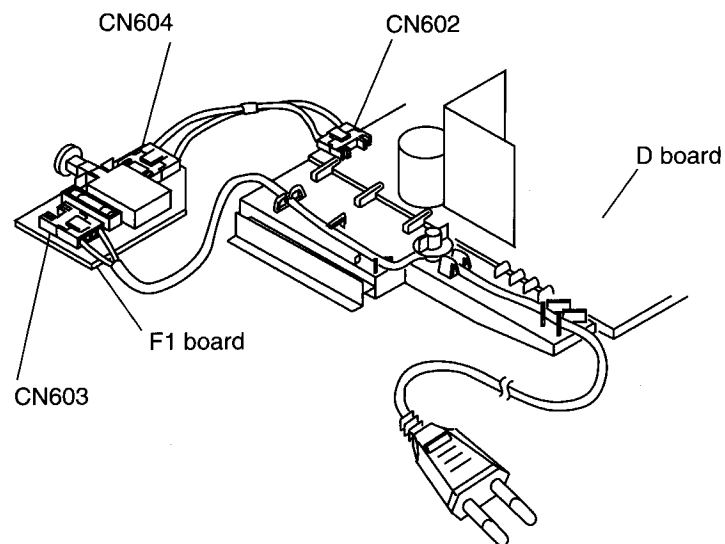
### 2-3. SPEAKER REMOVAL



### 2-4. SERVICE POSITION



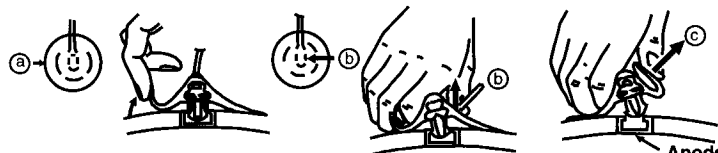
## 2-5. WIRE DRESSING



## • REMOVAL OF ANODE-CAP

**Note :** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

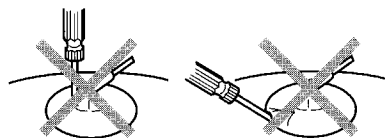
### • REMOVING PROCEDURES.



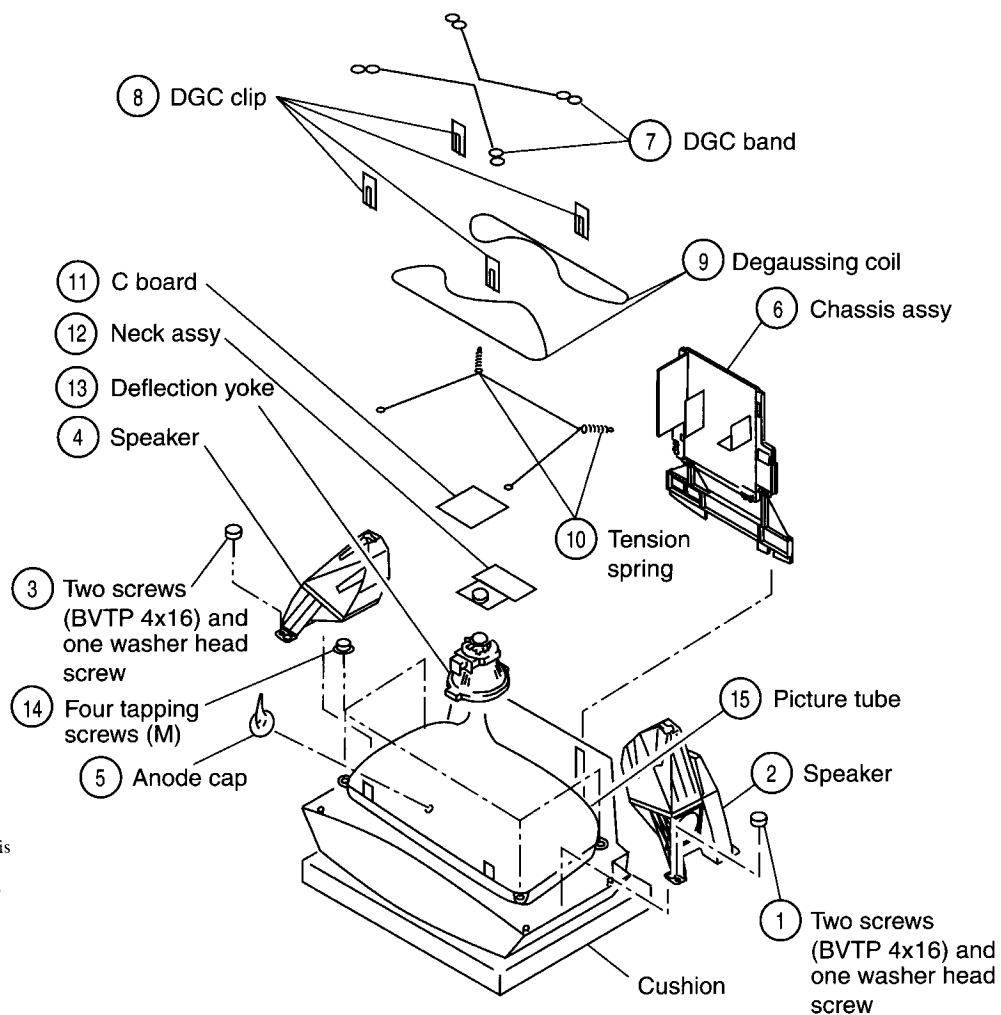
- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

### • HOW TO HANDLE AN ANODE-CAP

- ① Don't damage the surface of anode-cap with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built into the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or damage the rubber.



## 2-6. PICTURE TUBE REMOVAL



## SECTION 3

### SET - UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to these settings :

⬤ Contrast ..... 80% (or remote control normal)  
 ⚙ Brightness ..... 50%

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. Screen (G2), White balance

**Note:** Testing equipment required.

1. Colour bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

#### Preparation:

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.  
 CONTRAST } normal  
 BRIGHTNESS }
2. Position neck assy as shown in Fig.3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke forward and adjust with the purity control so that the red is at the centre and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
5. Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

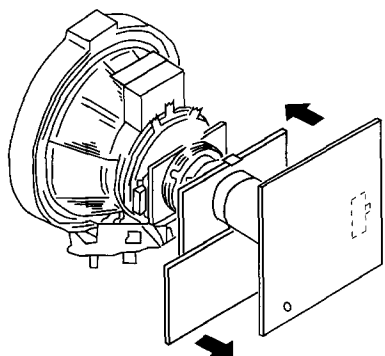


Fig. 3-1

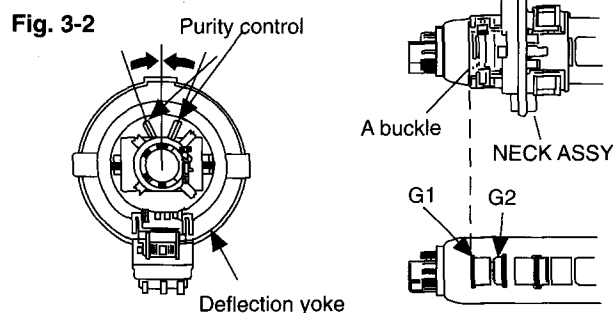


Fig. 3-2

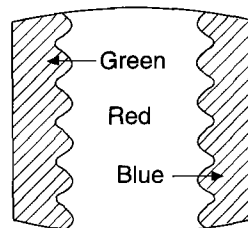


Fig. 3-3

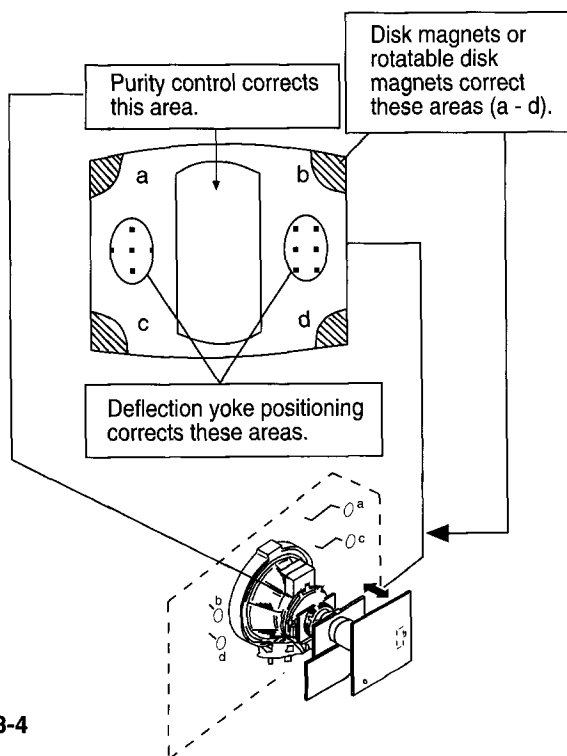


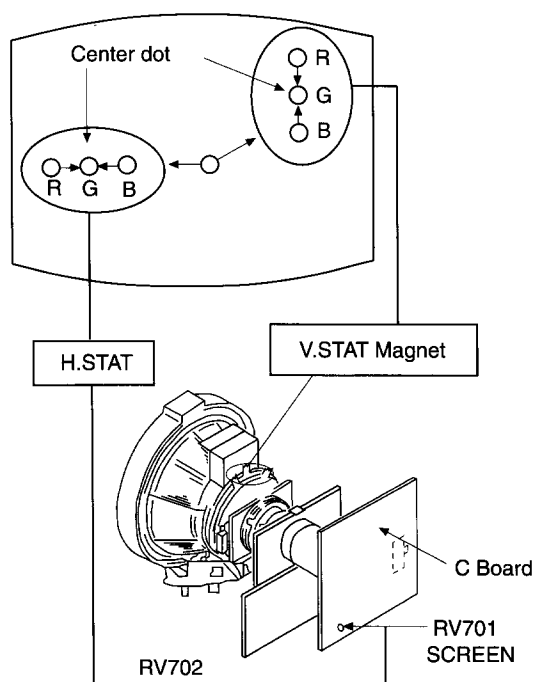
Fig. 3-4

### 3-2. CONVERGENCE

#### Preparation:

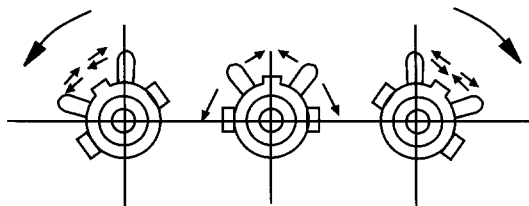
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

#### (1) Horizontal and vertical static convergence

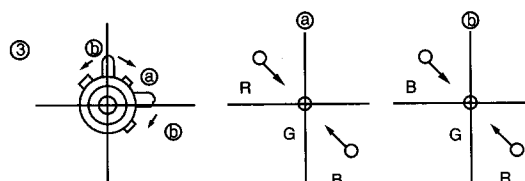
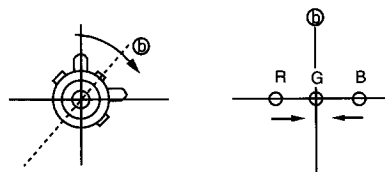
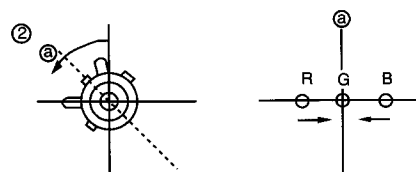
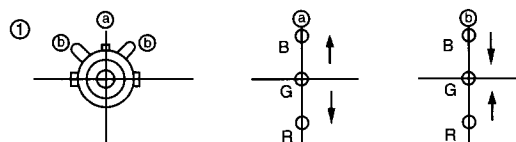


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the centre of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

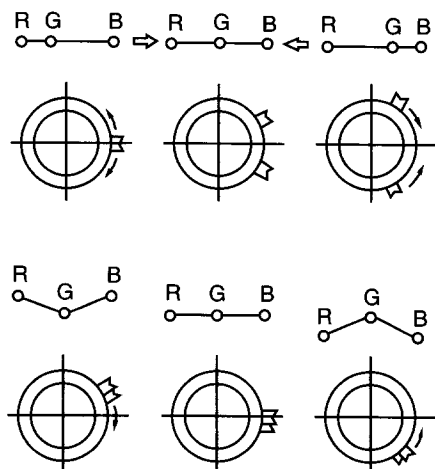
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



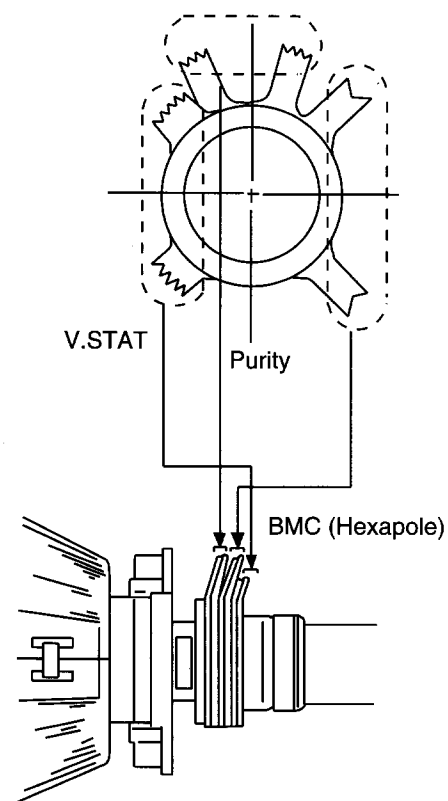
4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



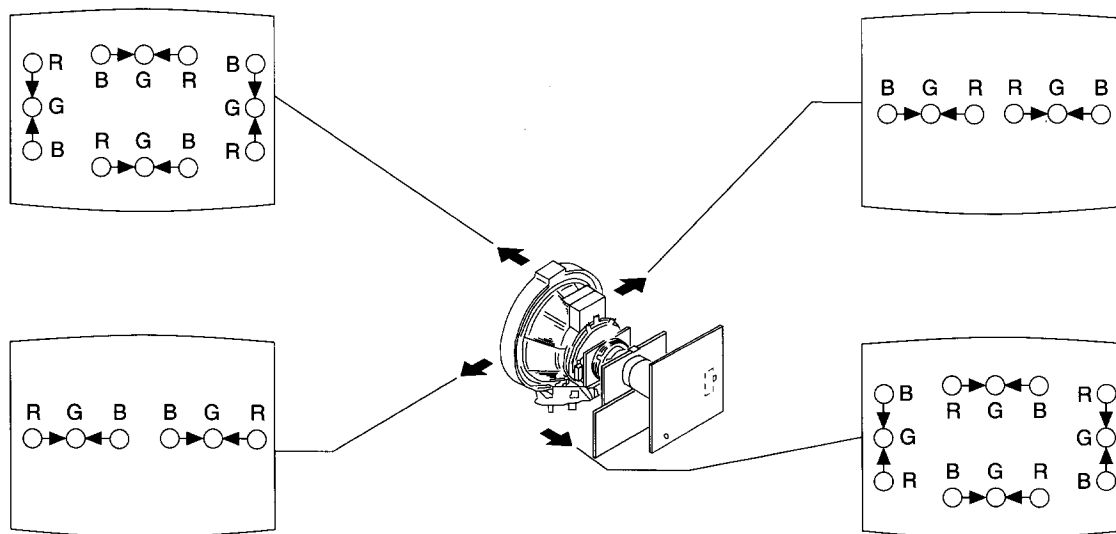
- The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.  
Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the centre of the screen (by moving the dots in the horizontal direction).



## (2) Dynamic convergence adjustment.

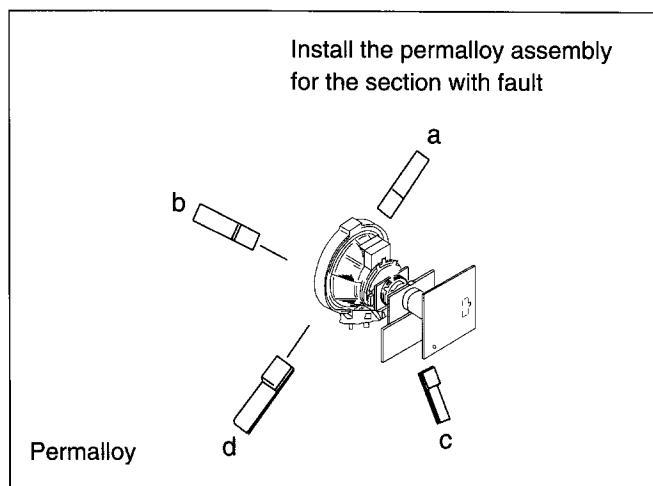
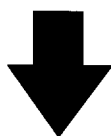
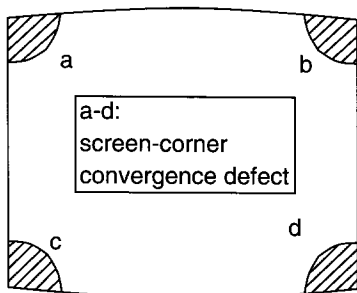
### Preparation:

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
1. Slightly loosen the deflection yoke screws.
  2. Remove the deflection yoke spacer.
  3. Move the deflection yoke as shown in the figure below and optimize the convergence.
  4. Tighten the deflection yoke screws.
  5. Re-install the deflection yoke spacer.

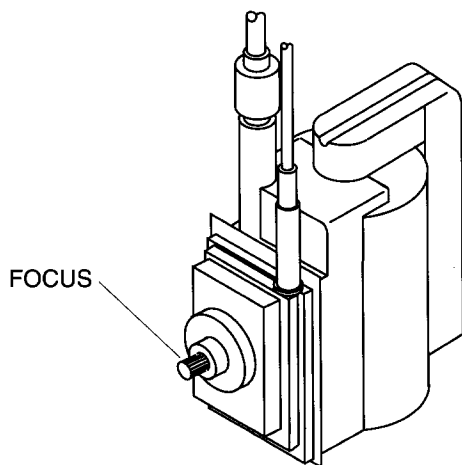


**(3) Screen corner convergence.**

If you are unable to adjust the corner convergence properly, correct them with the use of permalloy assemblies.

**3-3. FOCUS**

Adjust the focus to optimize the screen.

**3-4. SCREEN (G2), WHITE BALANCE****Screen G2 Setting**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 180V DC to the R,G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

**White balance adjustment**

1. Receive an all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" on how to enter service mode.)
3. Select TDA8366 1 on menu.

DEVICE : TDA8366 1

STAT : 12

☐ NEXT  
☐ PREVIOUS  
☐ OK

USE COLOUR KEYS  
 SONY TEST MENU.

4. Press the White button on the Remote Commander to enter into the device Menu.
5. Press the Red button 10 times "Next" "Next" "Next" to select HWB RED, adjust to 32.
6. Press the Red button to select HWB GREEN, adjust with the + and - menu buttons so that the white balance becomes optimum.
7. Press the Red button to select HWB BLUE, adjust with the + and - menu buttons so that the white balance becomes optimum.
8. Press the TV button twice on the Remote Commander to store the data and return to TV operation.

## SECTION 4

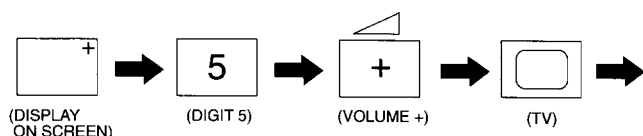
### CIRCUIT ADJUSTMENTS

#### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-837.

##### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set and enter into standby mode.
2. Press the following sequence of buttons on the Remote Commander.



“TT” will appear in the top right corner of the screen. Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.

DEVICE NAME

STAT : xxxx

☐ NEXT  
☐ PREVIOUS  
☐ OK

USE COLOUR KEYS  
SONY TEST MENU.

4. Press the Red (Next) and Green (Previous) buttons to select the device corresponding to the adjustment item from the table. Then press the White button (OK).

DEVICE NAME

00 ADJUSTMENT : xxx

☐ NEXT  
☐ PREVIOUS

SELECT COL.BUTTON  
CHANGE BY MENU +/-

5. Press the Red (Next) or Green (previous) buttons to select the adjustment item. Then press the and buttons to change the data to comply with each standard.
6. Turn off the power to quit the service mode when adjustments are completed.

Initial Conditions for setup of TDA8366, TDA6612, TDA6622 and SAA7283.

TDA8366 1	INIT VALUE	TDA8366 2	INIT VALUE
Hue	31	Interface	00
H Shift	Adj	Sync Mode	00
H Size	Adj	Col Dec	00
Pin Amp	Adj	Vert Div	00
Corn Pin	Adj	Vid ID	00
Tilt	Adj	EHT Track	01
V.Linear	Adj	En V Grd	00
V.Size	Adj	Serv Blk	00
S.Corr	Adj	OVP Mode	00
V.Cent	Adj	Aspect R	00
HWB Red	Adj	Start Freq	00
HWB Green	Adj	Y/C Input	00
HWB Blue	Adj	PAL/NTSC	00
Peaking	8	Xtal PLL	00
Bright	32	Y Delay	07
Colour	32	RGB Blk	00
Picture	37	Noise Cor	00
AGC Set	00	Fast Blk	01
Srce Sel 1	00	AFC Wind	00
Srce Sel 2	00	IF Sensy	00
Time Con	03	Mod Std	00
Xtal Ind	03	Vid Mute	01
FF Freq	02		

TDA6612 (TDA6622 UK models)	INIT VALUE	TDA6612 (TDA6622 UK models)	INIT VALUE
MPX Per	00	Mute 2	01
Quasi St	00	C1/2LS	00
Bass Exp	00	C1/2KH	00
H Pulse	00	Mono	01
Matrix St	00	Scart	00
Bypass	00	Scart D	00
Vol L Sp	07	AM	00
Vol R Sp	07	SAA7283	INIT VALUE
Vol HP	00	Mon M1/M2	01
Pil Sync	00	DM Select	01
Mute 3	01	SSWIT 123	07
Treble	08	Port 2	00
Bass	09	Mute Def	00
X Talk Adj	Adj	AMDIS	00
Mute 1	00	E Max	80
		E Min	01

## 4-2. TEST MODE 2 :

Is available by pressing Test button twice, OSD 'TT ' appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press 0 twice, or switch the TV into Stand-by Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Ageing Condition (Volume min., Picture max., Brightness max.
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	"Menu" Flag request
10	Tenth entry is deleted
11	dummy
12	dummy
13	dummy
14	Forced AV 16:9 detection on/off
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM.
17	Preset Label for AV Sources
18	RGB Priority on/off
19	Clear all preset labels
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24	Set destination = U RGB Priority = Off
25	Set destination = D RGB Priority = Off
26	Set destination = B RGB Priority = On
27	Set destination = K RGB Priority = Off
28	Set destination = L RGB Priority = Off
29	Set destination = E RGB Priority = Off

30	Tenth entry is deleted.
31	Set destination = A RGB Priority = on.
32	Switch between destination DN normal mode and destination DT Turkish mode.
33	Auto AGC.
34	N/S pin adjust.
35	Manual AGC adjust.
36	dummy
37	dummy
38	28" version on/off.
39	dummy
40	Tenth entry is deleted.
41	Re-initialise NVM.
42	Production use only.
43	Initialise Geometry settings.
44	Initialise all favorite pages to be 100.
45	Channel locks off.
46	IR channel presetting mode. The channel presetting can be done by a special IR transmitter.
47	Store geometry settings for 4:3 and smart.
48	Set NVM testbyte to 44h.
49	Erase the NVM Testbyte (this byte detects already stored NVM's). After selecting this function, switch TV off and on, the NVM will be preset by the micro controller.

In Test Mode the Menu display is switchable by the Speaker-Off button.

**Note :** For Test Modes 41 - 49 it is necessary to ensure that the TV is set to Prog 59.



**SUB BRIGHTNESS ADJUSTMENT**

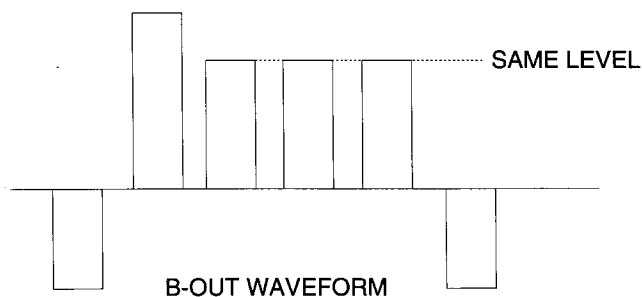
1. Input a Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of grey scale and CUT-OFF 20-IRE are only slightly visible on screen.

**SUB CONTRAST ADJUSTMENT**

1. Input a video that contains a small 100% area on a Black Background.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Connect oscilloscope to pin ① of CN703 (R OUT) and adjust HWB Red data of TDA8366 1 to obtain 2.3Vp-p.

**SUB COLOUR ADJUSTMENT**

1. Input a PAL colour bar signal.
2. Connect an oscilloscope to pin ③ of CN703 (B OUT) on the C board.
3. Enter into service mode and press 22.
4. Adjust data so that the right sides of the waveform are set to the same level.

**STEREO SEPARATION ADJUSTMENT**

1. Input a 1KHz stereo signal to the L-ch and a 400Hz stereo signal to the R-ch.
2. Enter into service mode and select the "Test Menu" to be TDA6612. (TDA6622 UK models.)
3. Select the Stereo Xtalk Adjustment Menu, by using the Red (Next) and Green (Previous) buttons.
4. Monitor the Scart 1 L-channel output and adjust the data so that the R-channel sound is not detected in the L-channel.

**I.F. COIL ADJUSTMENT (T101) - B/G, D/K, I AND L STANDARD FOR CONTINENTAL MODELS.**

1. Apply a 38.9MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

**I.F. COIL ADJUSTMENT (T101) - I, STANDARD FOR UK MODELS.**

1. Apply a 39.5MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

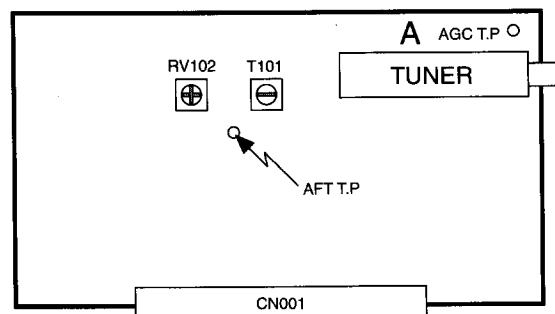
**L, BAND 1 ADJUSTMENT (RV102) - L, STANDARD FOR FRENCH MODELS.**

1. Apply a 33.95MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for positive modulation and system L band 1.
3. Measure the voltage at the AFT test point and adjust (RV102) to obtain 2.4V +/- 0.2V.

**Note :** Only adjust RV102 after T101 has been correctly adjusted.

**AGC ADJUSTMENT**

1. Receive an off- air signal.
2. Enter the service mode, ("Test" "Test") and 35.
3. Adjust the data so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



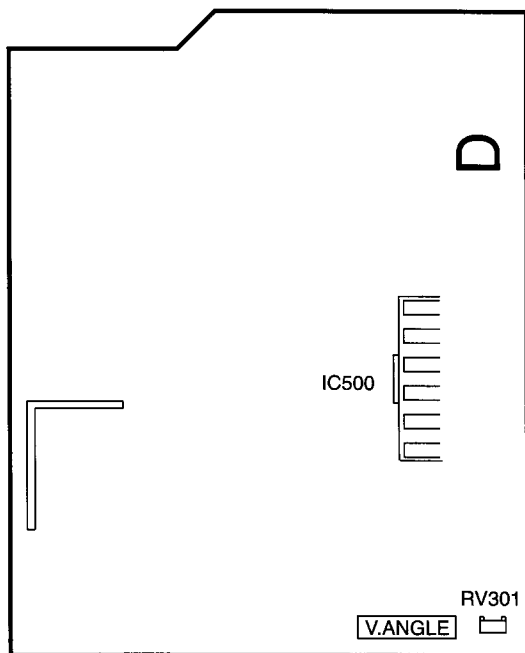
- A Board component side -

# DEFLECTION SYSTEM ADJUSTMENT

1. Enter into service mode.
2. Select and adjust each item in order to obtain the optimum image.

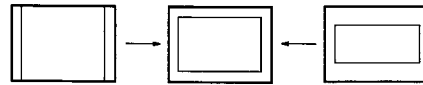
Item No	Adjustment item.	Data Amount
03	H SHIFT	ADJ.
04	H SIZE	ADJ.
05	PIN AMP	ADJ.
06	CORR PIN	ADJ.
07	TILT	ADJ.
08	V LINEAR	ADJ.
09	V SIZE	ADJ.
0A	S CORR	ADJ.
0B	V CENTRE	ADJ.

Note : V ANGLE is adjusted by a Variable Resistor on the 'D' Board (RV301)

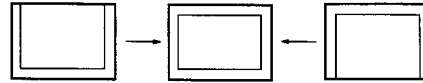


- D Board Component Side -

V SIZE



V CENTRE



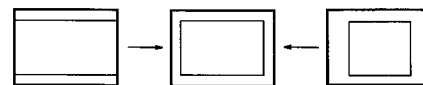
S CORR



V LIN



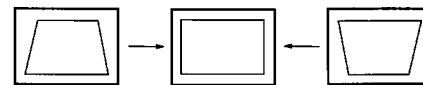
H SIZE



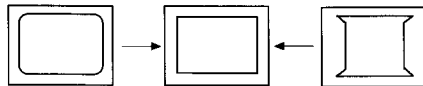
PIN AMP



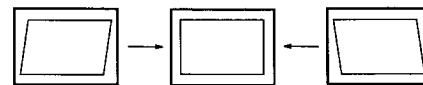
TILT



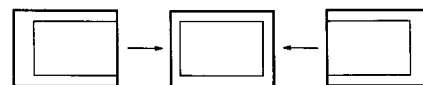
CORR PIN



V ANGLE



H SHIFT



### 4-3. BE-3B SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-3B chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the led (Series of flashes which must be counted) See Table 1, non fatal errors are reported with this method.

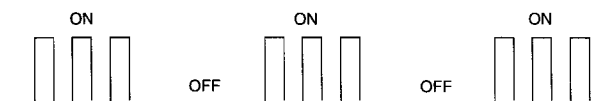
If a fatal error is found the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue operation.

**Table 1**

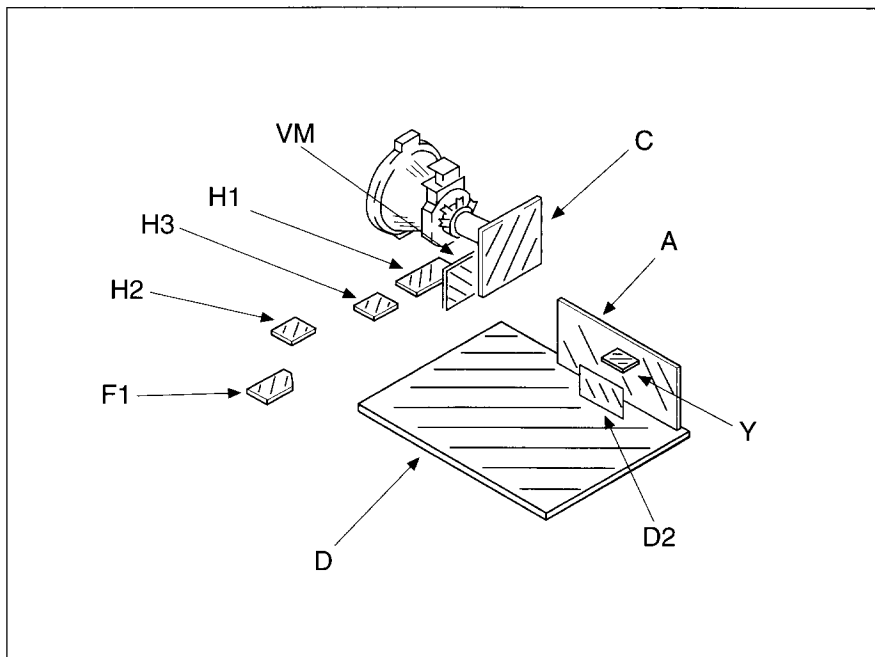
Device	LED Error Count	Fatal Error
NVM	2 .. 9	√
Teletext	10	
Jungle	11	√
Video_sw	12	
Tuner	13	√
Nicam	14	
Audio_cont	15	√

Flash Timing Example : e.g. error number 3.

Stby LED



## 5-2. CIRCUIT BOARDS LOCATION



## 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

### Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
 $\text{k}\Omega = 1000\Omega$ ,  $\text{M}\Omega = 1000\text{K}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm

Rating electrical power  $\frac{1}{4}$  W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\perp$  : earth - ground.
- $\text{///}$  : earth - chassis.
- $\#$  : no mounted.

**Note :** The components identified by shading and marked  $\uparrow$  are critical for safety. Replace only with the part number specified.

**Note :** Les composants identifiés par une trame et une marque  $\uparrow$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

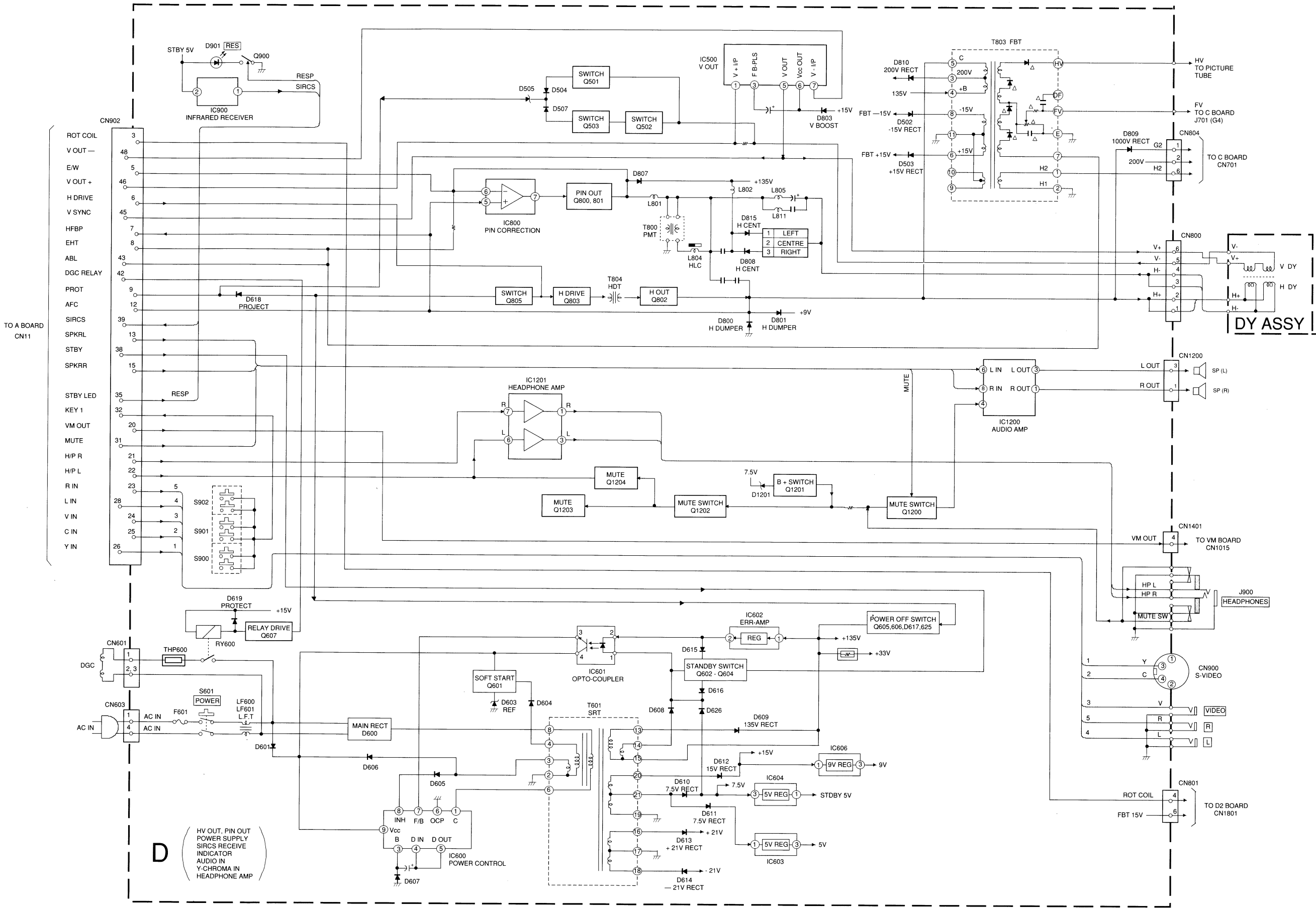
### Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	:	ADJUSTABLE RESISTOR
	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

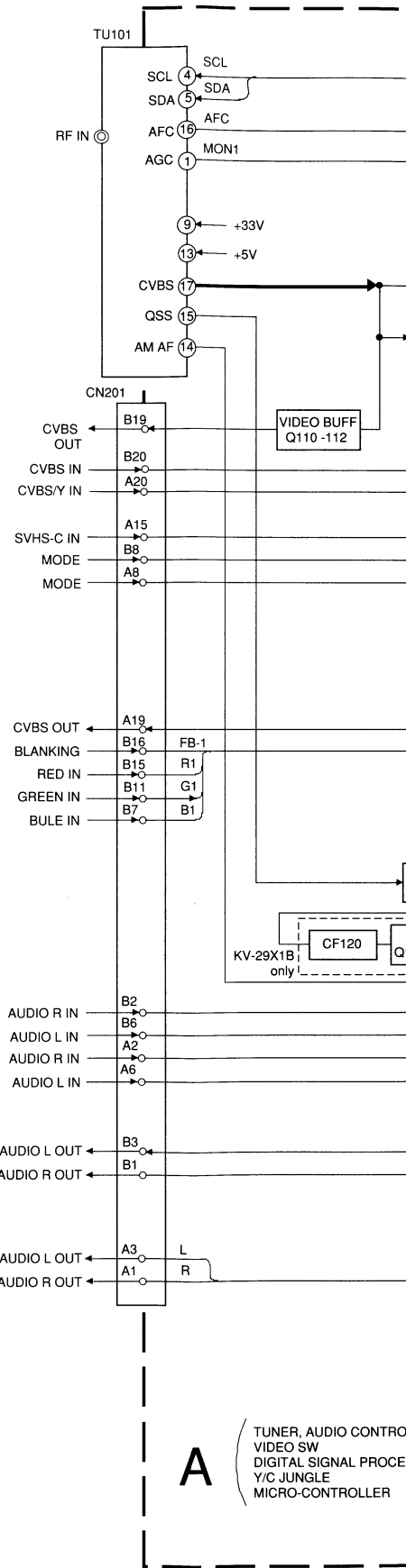
- Readings are taken with a colour-bar signal input.
- Readings are taken with  $10\text{M}\Omega$  digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)

SECTION  
DIAGRAMS

BLOCK DIAGRAM (1)

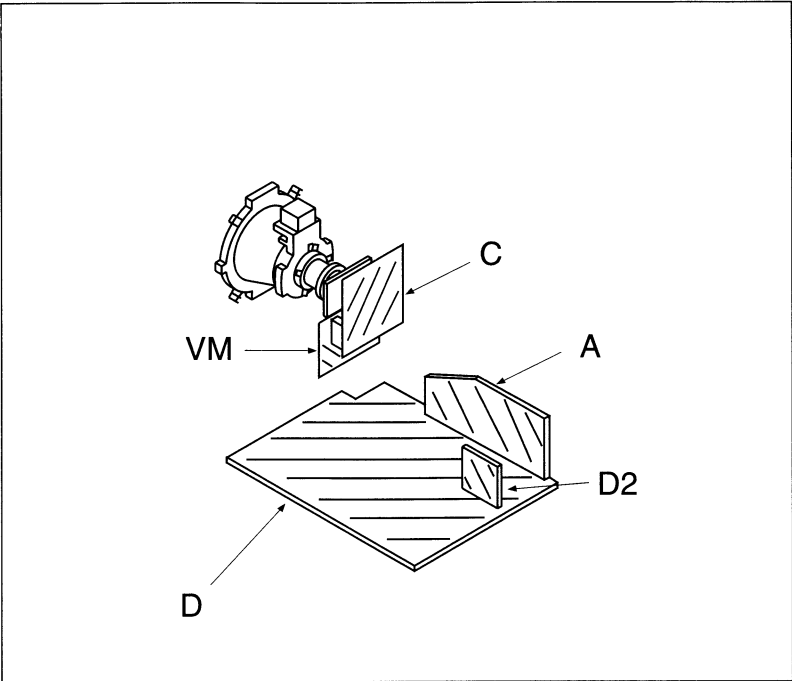


BLOCK DIAGRAM (2)





## CIRCUIT BOARDS LOCATION



### 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

**Note :**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
k = 1000 , M = 1000K
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm  
Rating electrical power  $\frac{1}{4}$  W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\perp$  : earth - ground.
- $\pi$  : earth - chassis.
- $\#$  : no mounted.

**Note :** The components identified by shading and marked are critical for safety. Replace only with the part number specified.

**Note :** Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**Reference information**

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: X	ADJUSTABLE RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
CAPACITOR	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M $\Omega$  digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)



**D**

A

C

E

## G

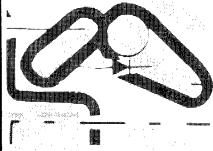
1

1

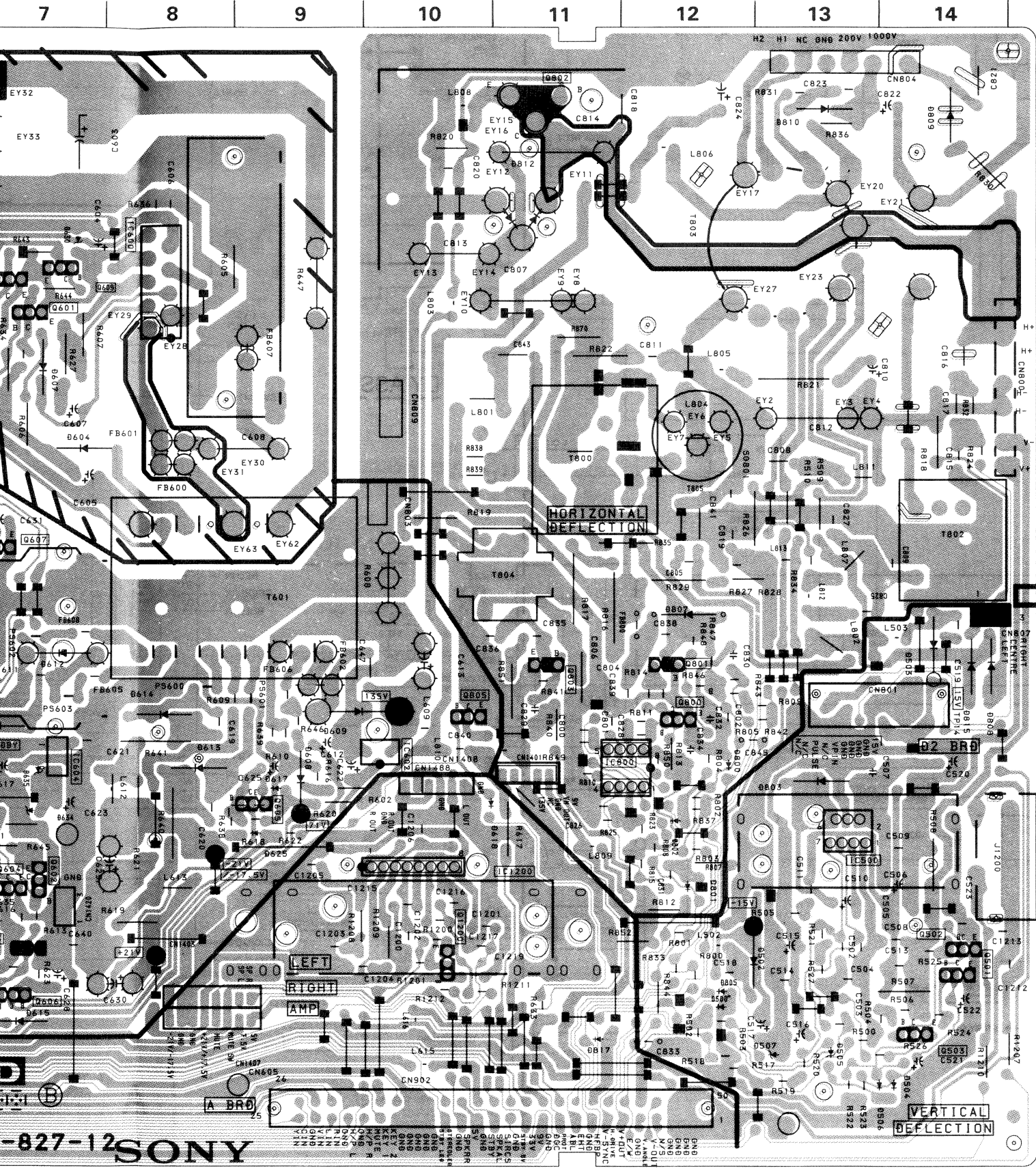
1-659-827-12 **SONY**

<sup>2</sup>SONY



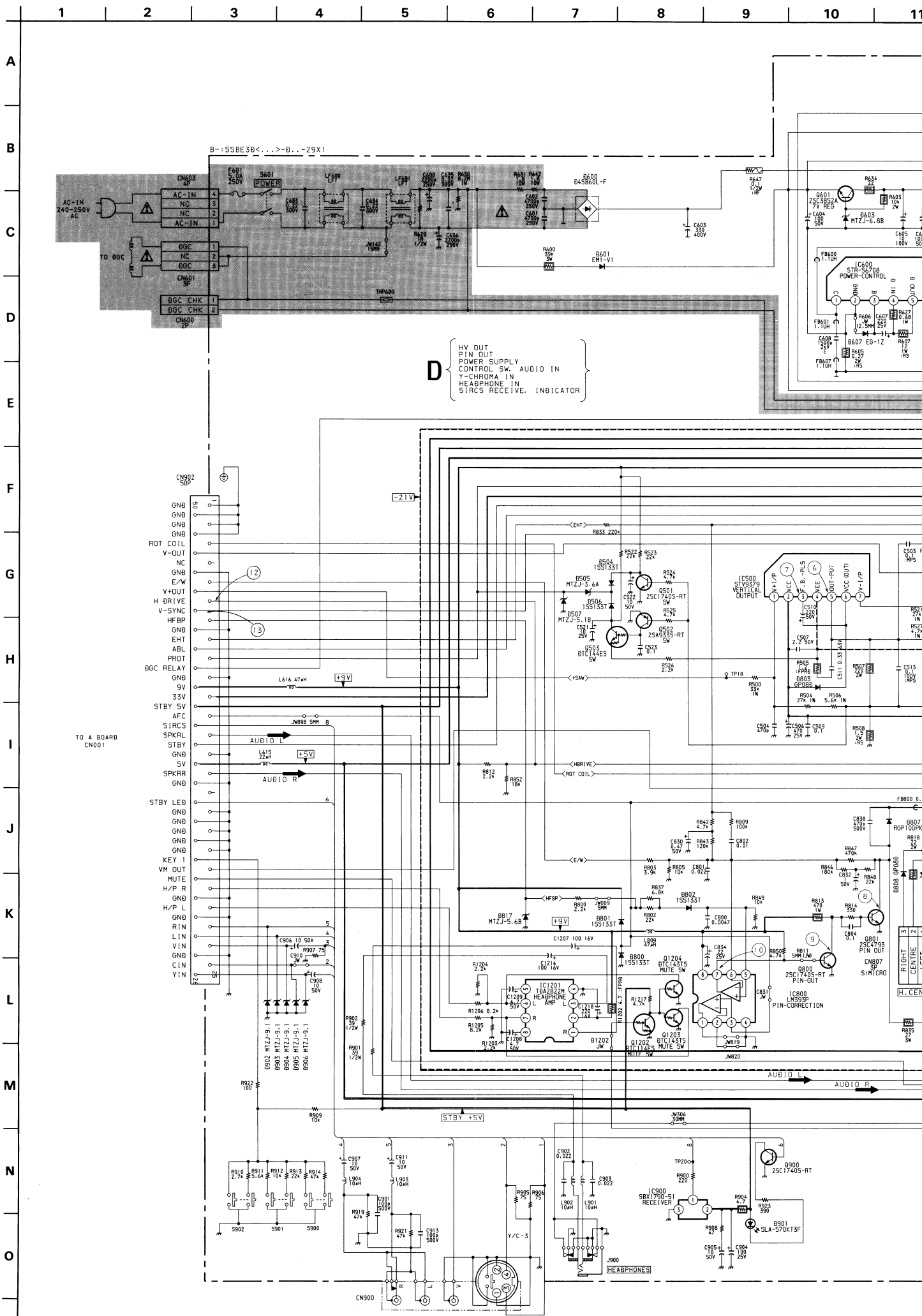


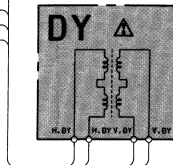
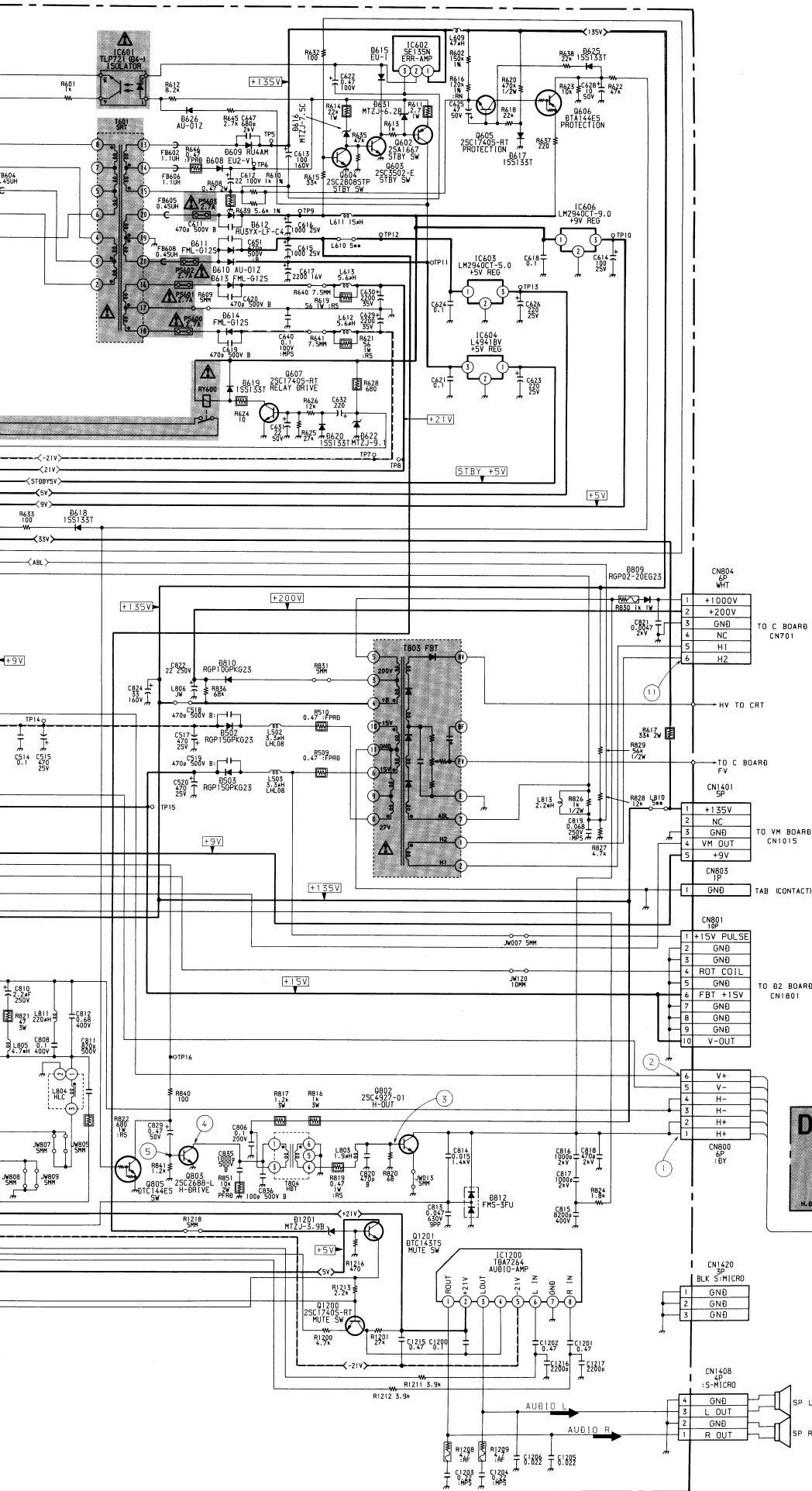
**NOTE:**  
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



D BOARD

IC		DIODE	
IC500	G-13	D600	A-7
IC600	B-8	D601	C-6
IC601	D-6	D603	C-7
IC602	F-10	D604	D-7
IC603	G-5	D605	C-6
IC604	F-7	D606	C-6
IC606	E-6	D607	C-7
IC800	F-12	D608	F-9
IC900	D-1	D609	F-9
IC1200	G-10	D610	F-7
IC1201	F-5	D611	F-6
TRANSISTOR		D612	E-7
		D613	F-8
Q501	H-14	D614	F-8
Q502	H-14	D615	H-7
Q503	H-14	D616	G-7
Q601	C-7	D617	F-9
Q602	G-7	D618	F-11
Q603	H-7	D619	E-6
Q604	G-7	D620	E-6
Q605	F-9	D622	E-6
Q606	H-7	D625	G-9
Q607	D-7	D626	G-6
Q800	F-12	D631	F-6
Q801	E-12	D800	F-12
Q802	A-11	D801	G-12
Q803	E-11	D802	G-12
Q805	F-10	D803	F-13
Q900	G-4	D807	E-12
Q1200	H-10	D808	E-14
Q1201	G-6	D809	A-14
Q1202	G-5	D810	A-13
Q1203	G-5	D812	B-11
Q1204	G-5	D815	E-14
DIODE		D817	H-11
		D901	C-1
D500	H-12	D902	I-5
D502	H-13	D903	H-4
D503	I-14	D904	H-5
D504	H-11	D905	I-5
D505	H-13	D906	I-5
D506	I-14		
D507	H-13	D1201	G-6





Pin	Signal
1	+1000V
2	+200V
3	GND
4	NC
5	H1
6	H2

Pin	Signal
1	+135V
2	NC
3	GND
4	VM OUT
5	+9V

Pin	Signal
1	+15V PULSE
2	GND
3	GND
4	ROT COIL
5	GND
6	FBT +15V
7	GND
8	GND
9	GND
10	V-OUT

Pin	Signal
1	V+
2	V-
3	H-
4	H-
5	H+
6	H+

Pin	Signal
1	GND
2	GND
3	GND

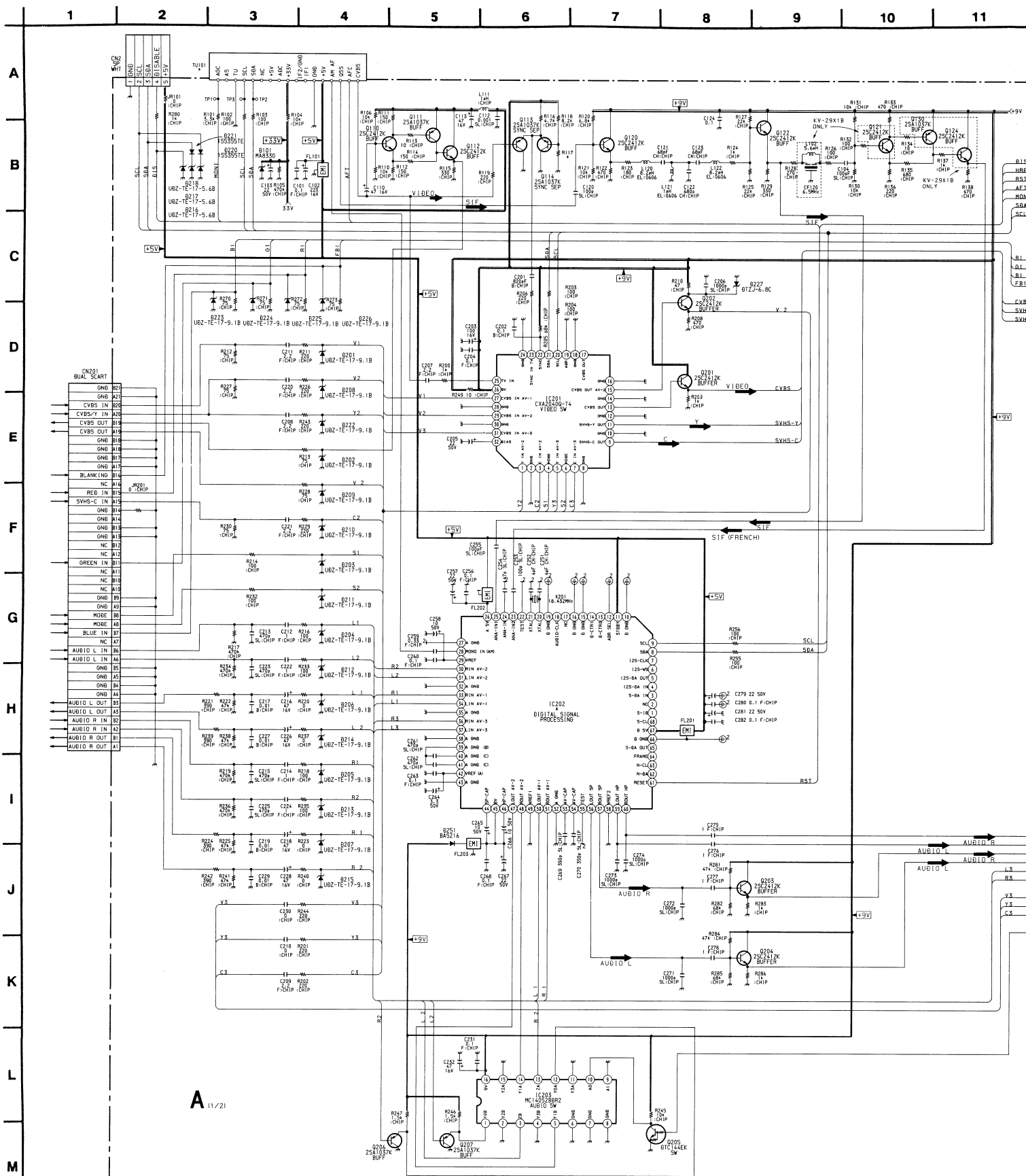
Pin	Signal
1	GND
2	L OUT
3	GND
4	R OUT

D BOARD  
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q501	-0.1	0.2	-
Q502	0.1	-5.8	-
Q503	-5.8	-12.0	-12.0
Q602	72.0	7.5	72.7
Q603	0	72.0	-
Q604	0.7	-	-
Q605	0.5	-	0.3
Q606	-	-	12.0
Q607	-	12.0	-
Q800	0.2	3.1	-
Q801	0.3	17.0	-
Q802	-0.2	143.3	-
Q803	-0.6	99.8	-
Q805	-	3.6	-
Q900	-	5.4	-
Q1200	2.9	21.5	4.6
Q1201	3.4	5.0	3.0
Q1202	2.8	-	-

D BOARD IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC500	1	1.5
	2	15.0
	3	-12.3
	4	-14.0
	5	0.1
	6	15.2
	7	1.4
IC600	1	170.0
	2	-62.4
	3	-62.6
	4	-62.2
	5	-62.0
	6	-62.6
	7	-62.4
	8	-62.0
	9	-58.0
IC601	1	64.3
	2	63.0
	3	-62.5
	4	-58.6
IC602	1	135.0
	2	63.2
	3	-0.1
IC800	3	0.9
	5	1.5
	6	2.0
	7	0.2
	8	9.0
IC1200	2	21.7
	4	21.5
	5	-21.7
IC1201	1	4.0
	2	9.0
	3	4.0
	5	0.5
	8	0.5



B--SSBSE30<...>A...-29X1

### A BOARD \* MARK

Model	29X1A	29X1B	29X1D	29X1E	29X1K	29X1L	29X1R	29X1U
Ref. No.								
C370	—	2.2UF	2.2UF	2.2UF	2.2UF	—	2.2UF	—
C372	—	0.1UF	0.1UF	0.1UF	0.1UF	—	0.1UF	—
C373	—	0.22UF	0.22UF	0.22UF	0.22UF	—	0.22UF	—
D370	—	BAS216	BAS216	BAS216	BAS216	—	BAS216	—
IC3	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBW101	TMS27PC010A-15FMBW101	TMS27PC010A-15FMBW101
IC202	MSP3400C-PS	MSP3410-15	MSP3400C-PS	MSP3410-15	MSP3400C-PS	MSP3410-15	MSP3400C-PS	MSP3410-15
IC303	—	TDA8395T	TDA8395T	TDA8395T	TDA8395T	—	TDA8395T	—
R13	150	—	150	150	150	150	150	150
R14	150	—	150	150	150	150	150	150
R15	150	—	150	150	150	150	150	150
R16	100	—	100	100	100	100	100	100
R17	100	—	100	100	100	100	100	100
R117	1.8K	1.8K	1.8K	1.8K	1.8K	1.8K	1.8K	2.0K
TU101	TUVIF (AEP)	TUVIF (FR)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (UK)



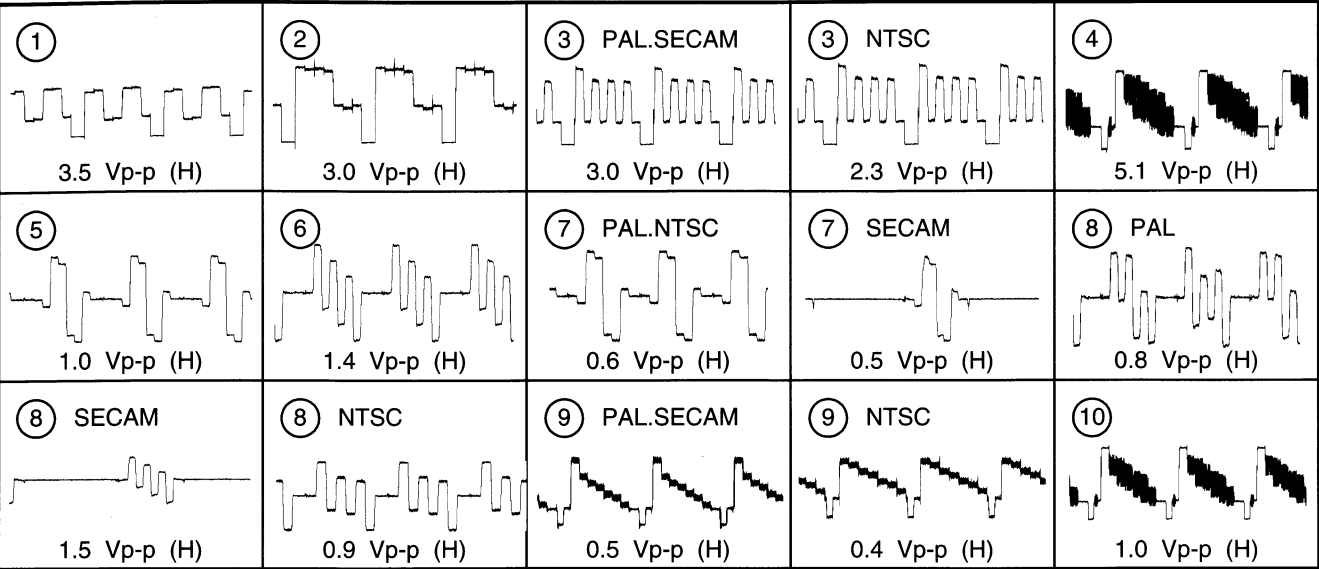
IC Voltage Table		
Ref No.	Pin No.	Voltage (V)
IC201	13	4.4
	15	4.4
	20	3.5
	21	2.7
	22	4.9
	23	4.4
	24	0
	25	4.4
	26	8.8
IC202	32	4.4
	4	2.8
	6-7	0.1
	8	3.0
	9	3.6
	11	4.7
	13	4.7
	20-21	2.4
	23	0.2
	25	1.5
	26	4.8
	28	3.8
	29	2.6
	39-42	3.8
	44	7.1
45	8.0	
46	7.1	
47-48	3.8	
53-54	3.8	

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q1	3.7	4.8	3.1
Q4	0.1	4.8	-
Q5	0.7	4.8	4.0
Q15	-	4.3	-
Q16	4.3	0.2	-
Q17	0.4	3.5	-
Q18	3.5	0.7	-
Q80	2.6	2.2	-
Q81	2.4	-	3.0
Q304	-	4.8	-
Q305	-	4.8	-
Q330	4.5	-	5.1
Q331	6.3	8.8	5.7
Q332	3.1	8.8	2.5
Q1001	4.4	-	-

Ref No	B Base	C Collector	E Emitter
Q110	1.8	8.2	1.2
Q112	1.5	8.8	0.8
Q113	1.8	-	-
Q114	5.4	6.0	-
Q120	84.3	8.8	3.7
Q121	1.5	5.4	0.9
Q122	5.4	8.8	4.7
Q124	-	8.8	-
Q201	4.4	8.8	3.7
Q202	4.4	8.8	3.7



WAVEFORMS A BOARD



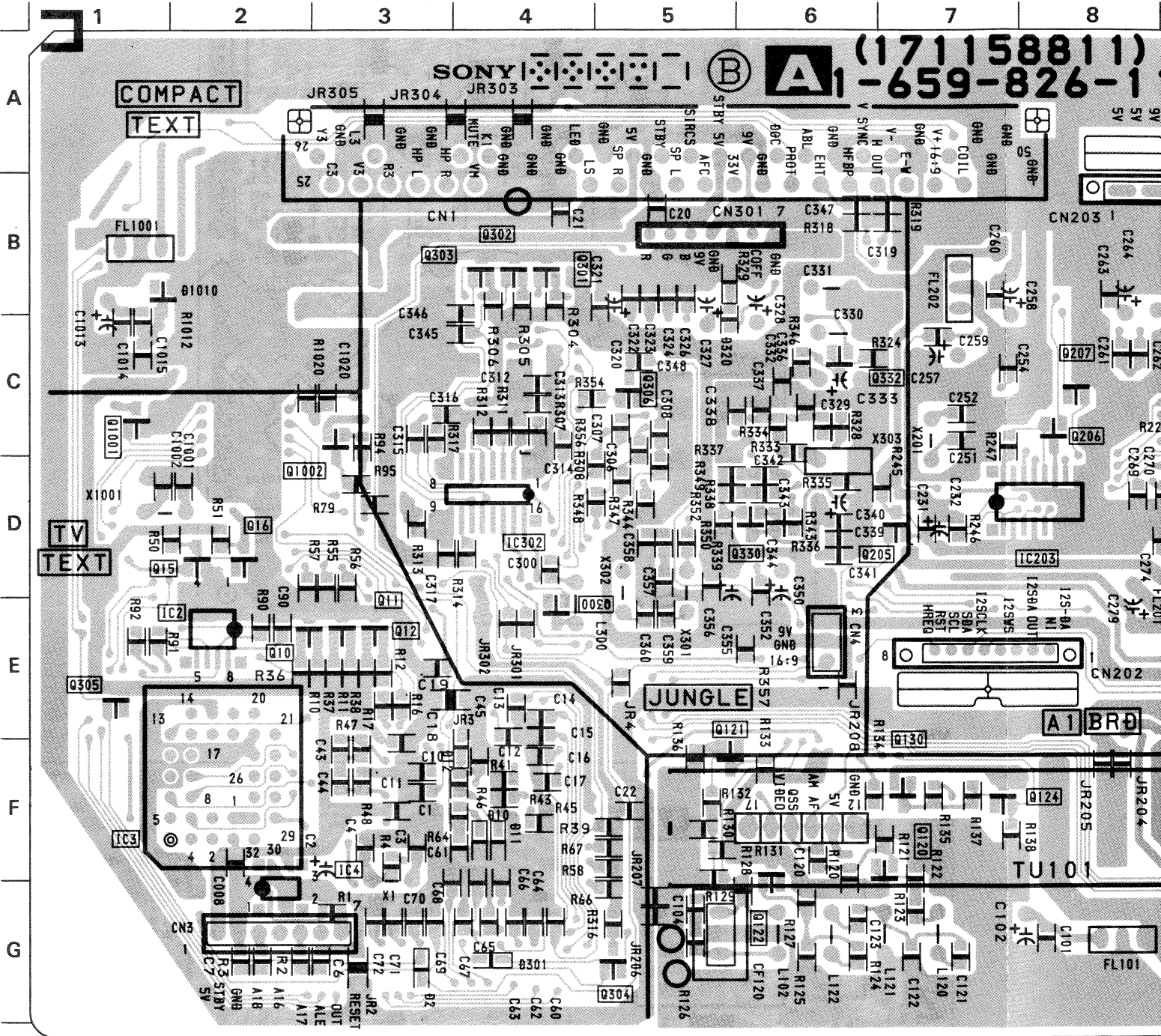
A (2/2) BOARD IC VOLTAGE TABLE

IC Voltage Table								
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC1	2	3.6	IC301	5	3.6	IC301	61	5.0
	3-4	4.8		6	5.0		62	7.6
	5	0.5		7-8	5.4		1	4.8
	7	4.8		10	0.6		5	0.7
	9	4.8		12-14	5.4		9	4.8
	11	2.4		16	4.0		11-12	3.0
	13	4.8		17-19	5.4		14	1.3
	14-15	2.3		20	8.8		16	1.3
	16-17	4.8		22-23	2.2		5	8.0
	48	4.0		24	2.0		3-2	10
	51	4.8		25	2.4		11	5.6
	52-53	2.4		26	2.0		0	19
	54	0.7		27	4.0		20	3.7
	55	0.2		28	6.6		4	0.2
	56-57	4.8		29	8.8		5	0.7
	58	2.8		31-33	3.0		4	0.2
	59	3.5		34	4.0		5	0.7
	60	2.4		35	4.6		6	1.7
	62	0.7		36	8.8		7	1.8
	63	4.4		37	3.1		10	0.4
	65	4.8		38	3.4		11-12	4.8
IC2	66	2.1		39	5.3	IC303	16	4.8
	67	2.0		40	4.2		17	0
	69-71	2.3		41	2.3		21	4.8
	72	4.8		43	1.7		23	3.0
	73	1.5		44	8.8		25	4.8
	74	1.2		45	2.5		56	0
	75-77	4.8		46	3.9		61	1.3
	79	0.2		47	3.0		62-63	1.4
	80	4.8		48	4.4		64	0
				49	6.3		66	4.6
IC3	1	4.8		50-51	0.1	IC1001	67	4.7
	31-32	4.8		53	3.9		68	4.0
IC4	1	4.8		54	5.0			
	3	4.8		55-56	4.2			
IC301	1	1.5		58-59	8.8			
	3-4	5.6		60	5.3			

A

TUNER, AUDIO CONTROL VIDEO SW, DIGITAL SIGNAL PROCESSING  
Y/C JUNGLE MICRO CONTROLLER

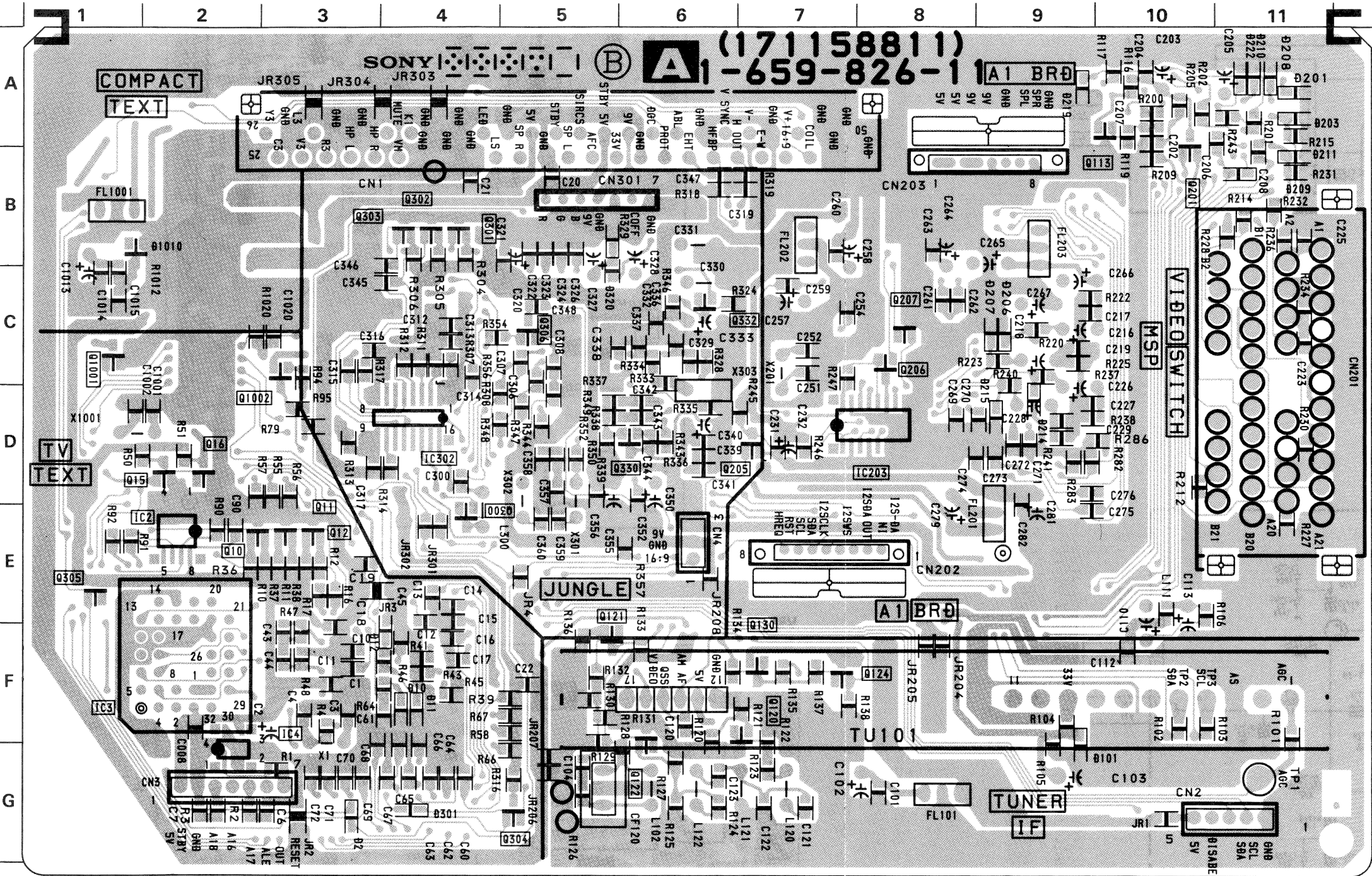
A Board <Conductor Side>



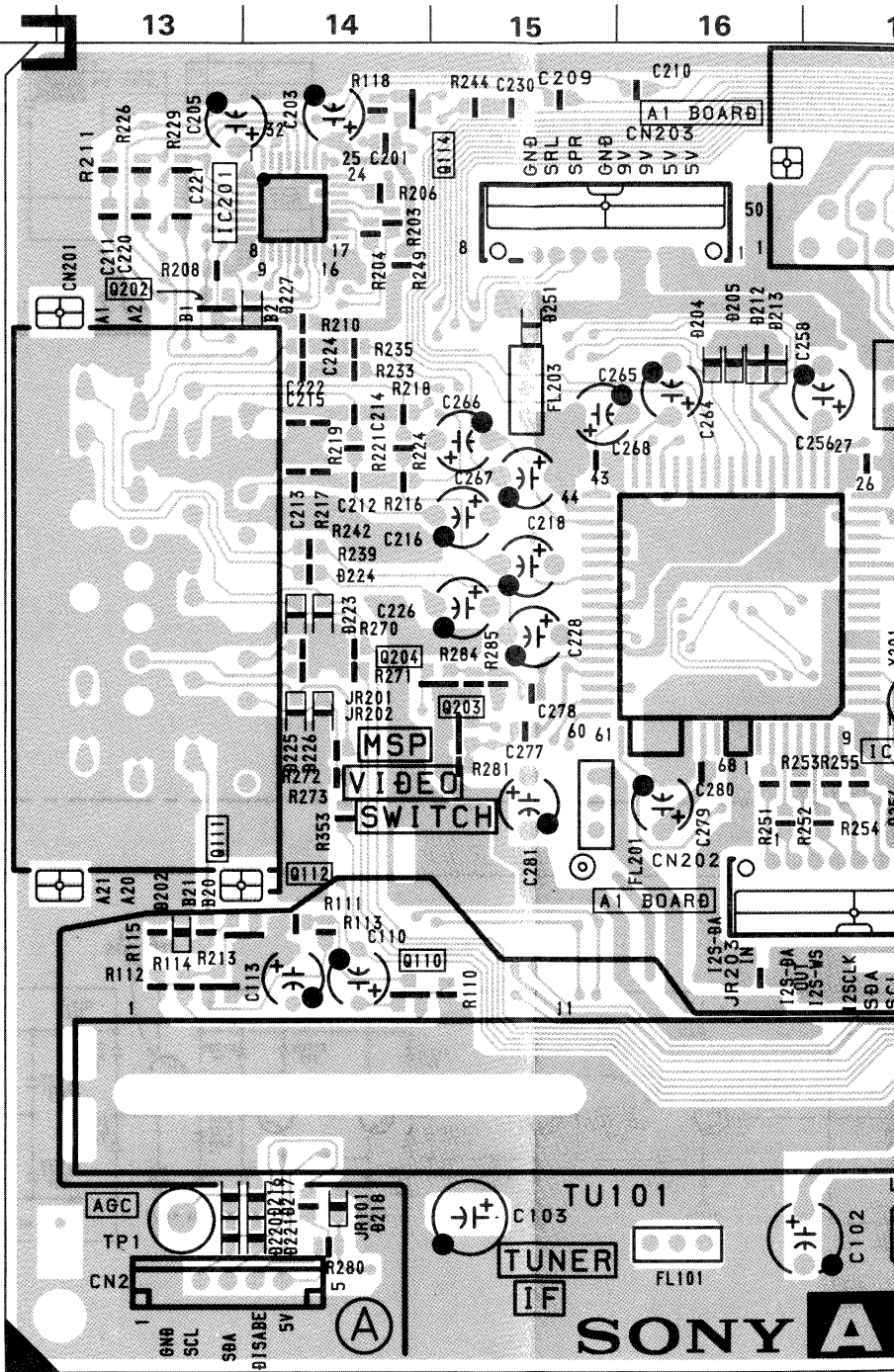


**A** [ TUNER, AUDIO CONTROL VIDEO SW, DIGITAL SIGNAL PROCESSING ]  
[ Y/C JUNGLE MICRO CONTROLLER ]

A Board <Conductor Side>

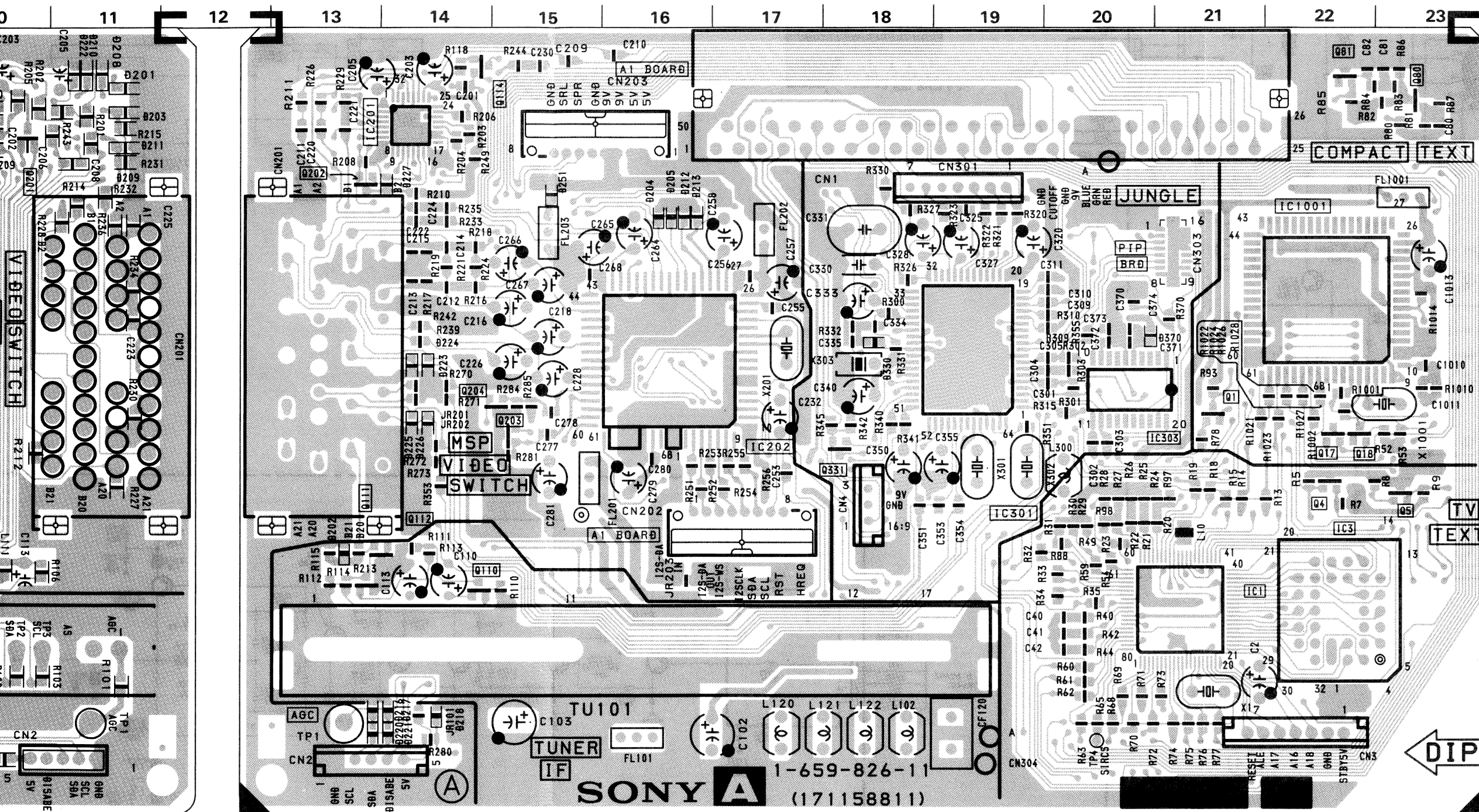


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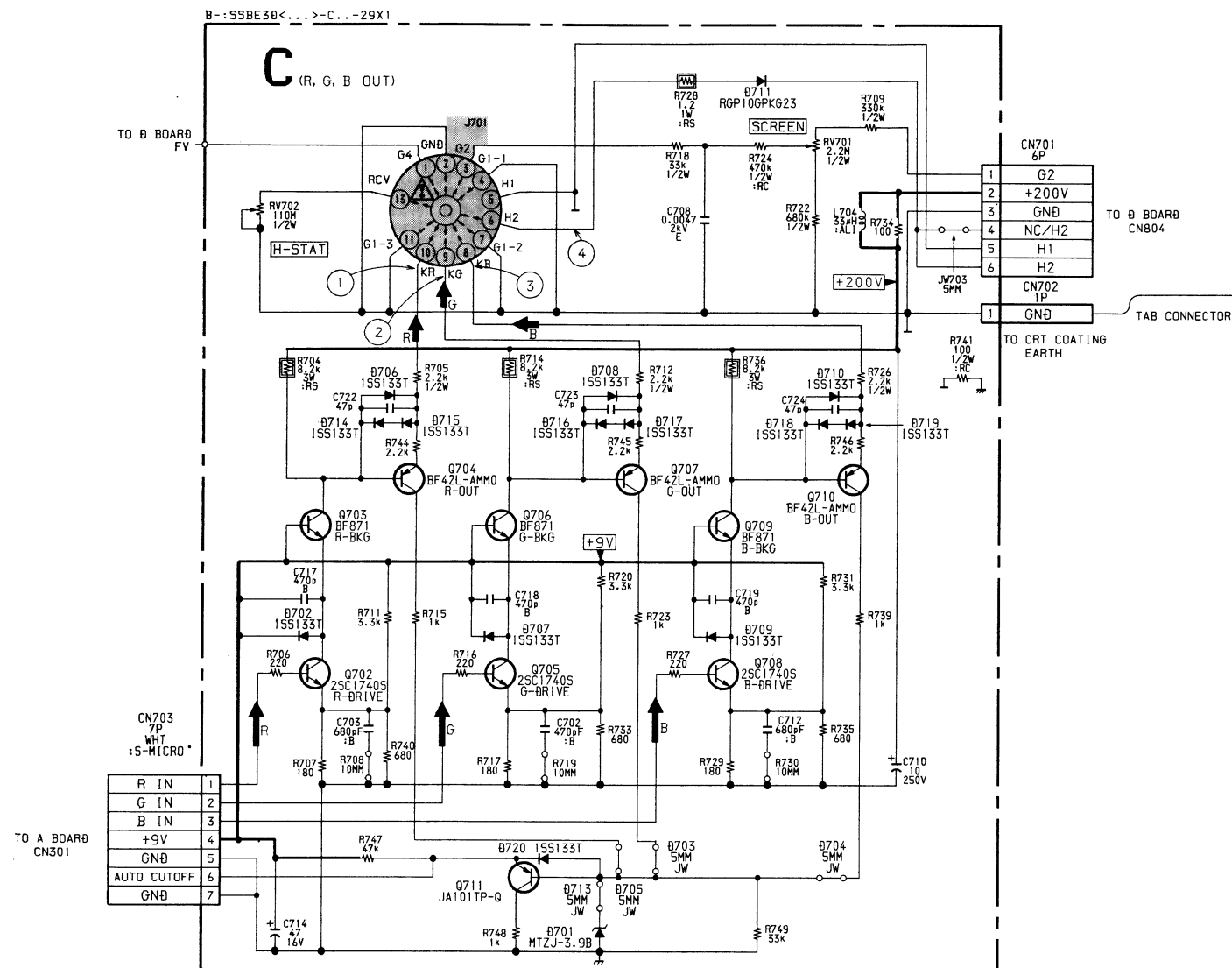


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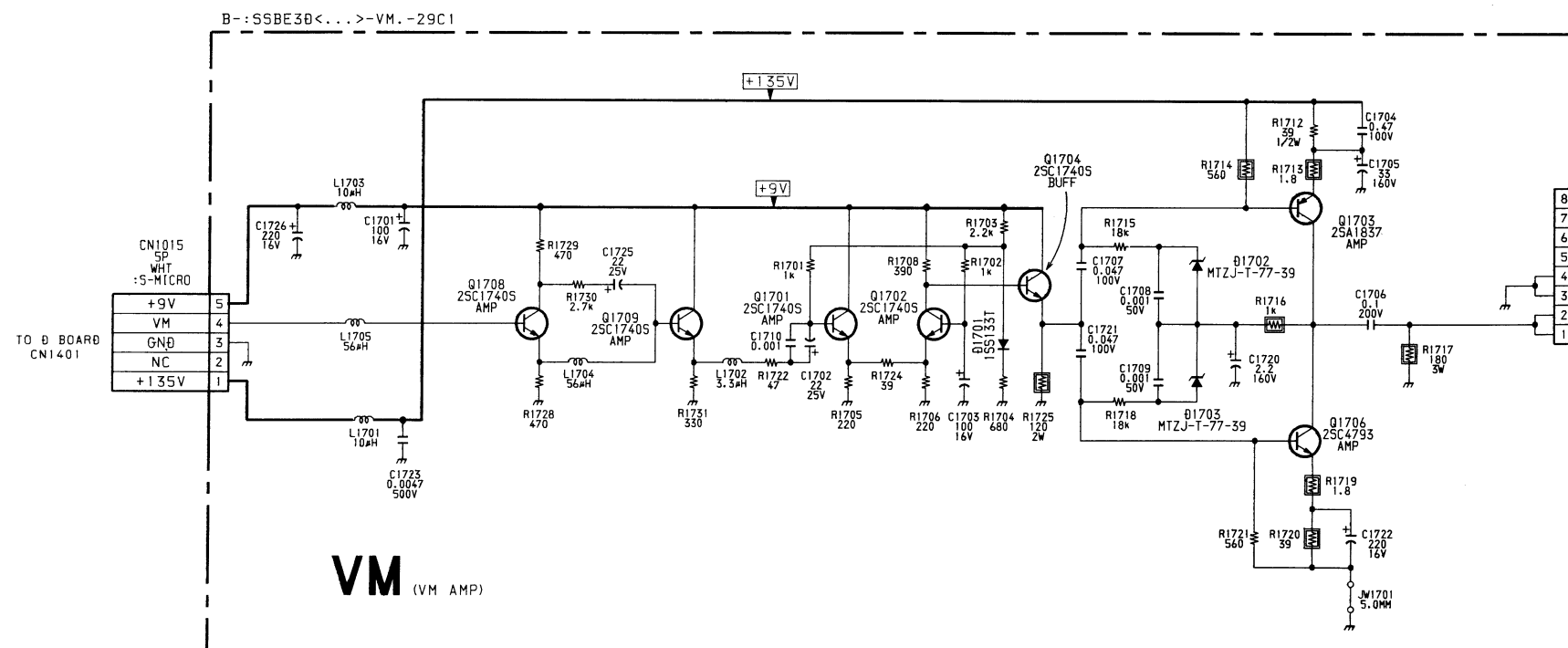
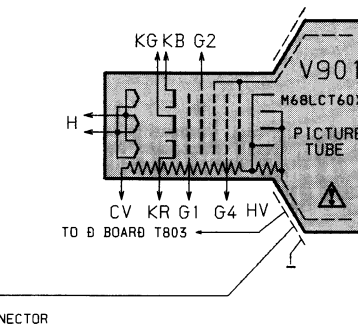
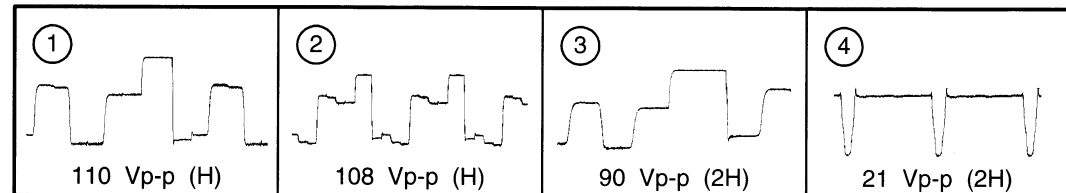


A BOARD

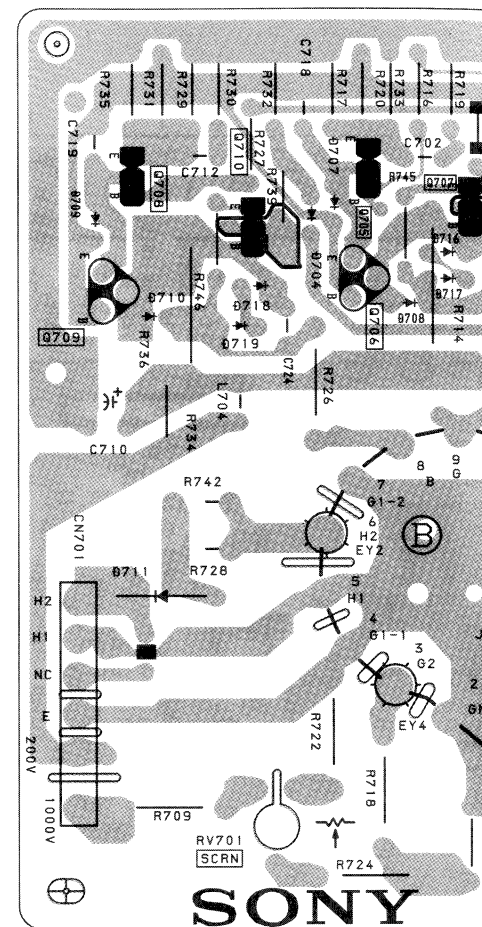
IC			
IC1	F-21	Q305	E-1
IC2	E-2	Q306	C-5
IC3	F-2	Q330	D-6
IC4	G-2	Q331	D-18
IC201	A-14	Q332	C-6
IC202	C-16	Q1002	C-3
		DIODE	
IC203	D-8	D2	G-3
IC301	C-19	D10	F-10
IC302	D-4	D11	F-10
IC303	D-21	D12	F-4
		TRANSISTOR	
Q1	D-21	D101	F-9
Q4	E-22	D201	A-11
Q5	E-23	D202	E-13
Q10	E-2	D203	A-11
Q11	E-3	D204	B-16
Q15	D-2	D205	B-16
Q16	D-2	D206	C-9
Q17	D-22	D207	C-9
Q18	D-23	D208	A-11
Q80	A-23	D209	B-11
Q81	A-22	D210	A-11
Q110	F-14	D211	B-11
Q111	E-14	D212	B-16
Q112	E-14	D213	B-16
Q113	A-10	D214	D-9
Q114	A-14	D215	D-9
Q120	F-7	D216	G-14
Q121	F-5	D217	G-14
Q122	F-6	D218	G-14
Q124	F-7	D220	G-14
Q130	F-7	D221	D-14
Q201	B-10	D222	D-14
Q202	B-13	D223	D-14
Q203	D-15	D224	D-14
Q204	D-15	D225	D-14
Q205	D-7	D226	D-14
Q206	C-8	D227	B14
Q207	C-8	D251	B-15
Q300	E-4	D320	C-5
Q304	G-5	D370	C-21



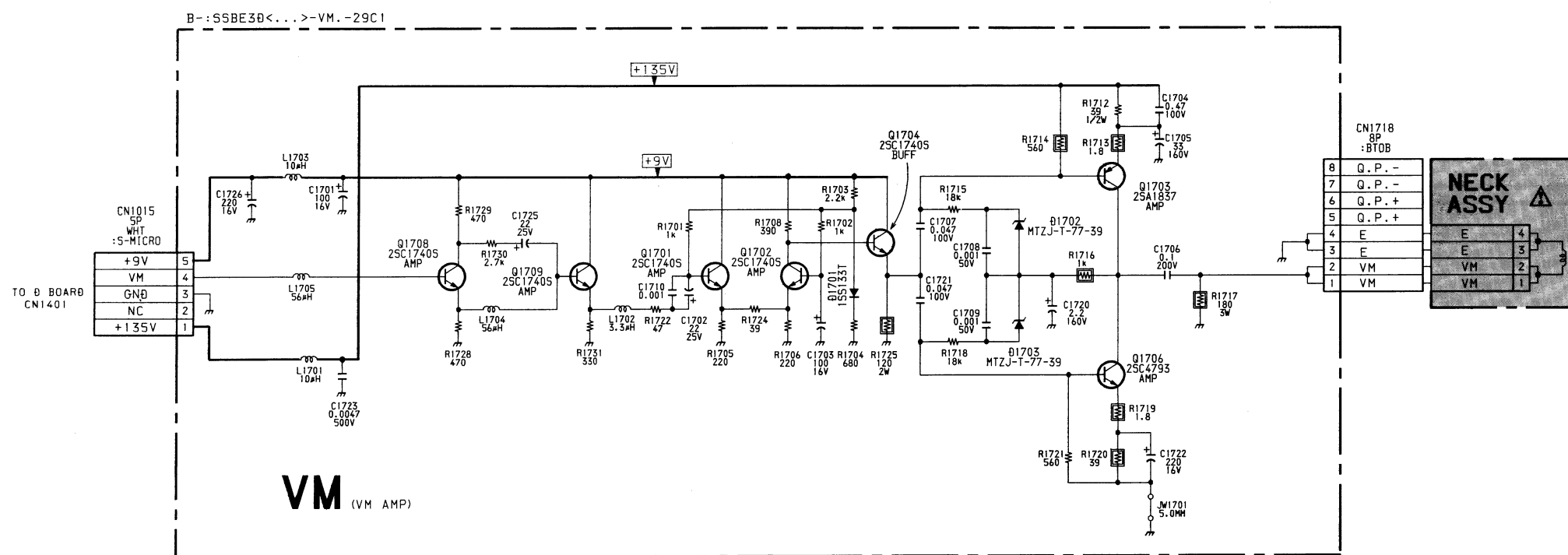
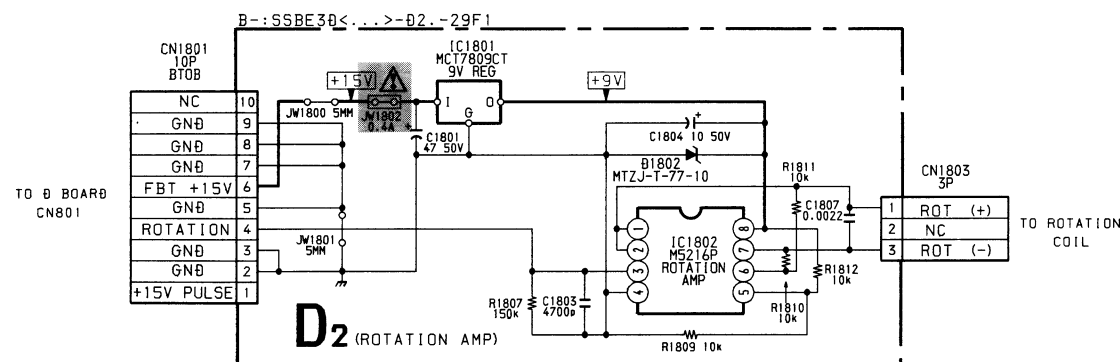
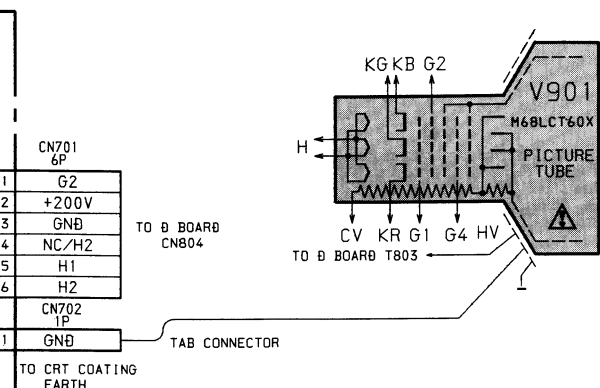
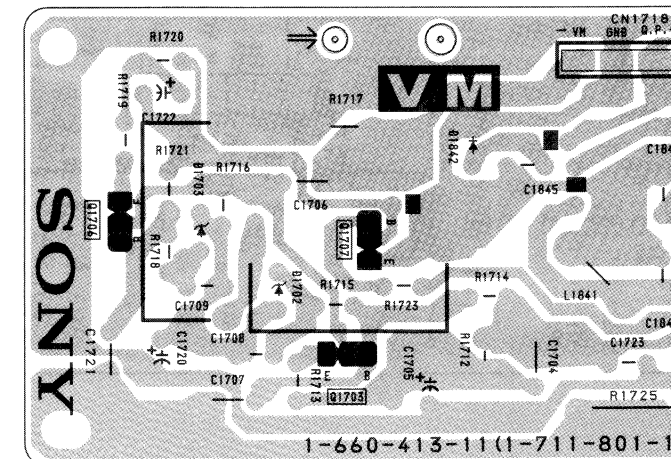
WAVEFORMS C BOARD



# C Board



# VM Board





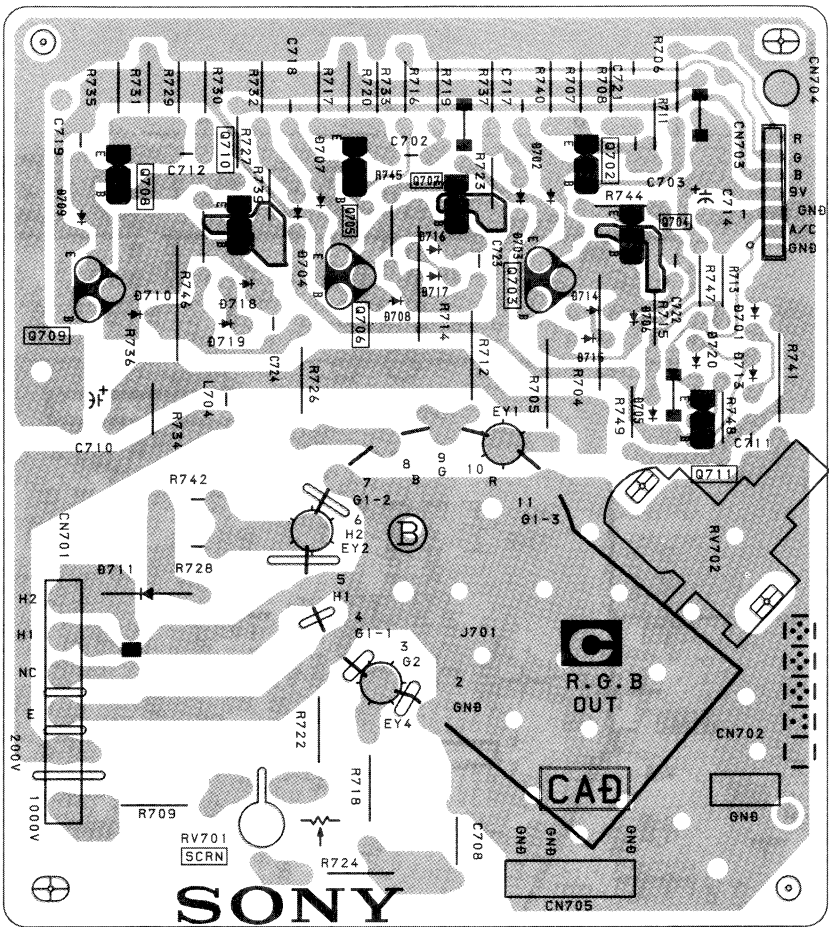
**C**

[ R, G, B OUT ]

**VM**

[ VM AMP ]

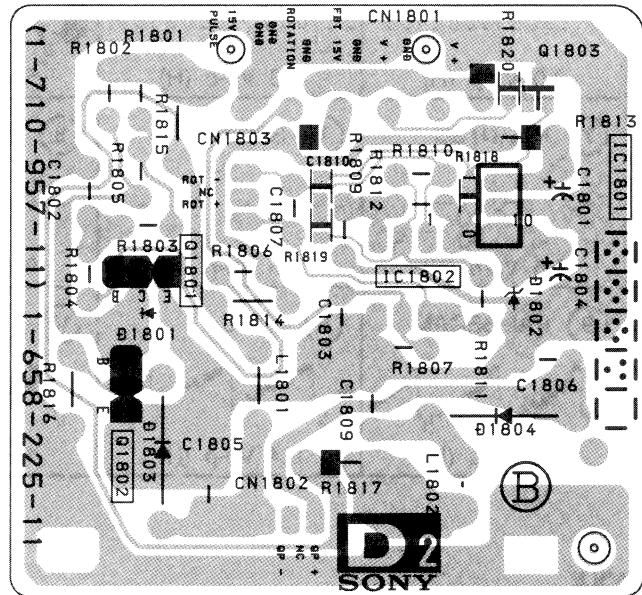
C Board



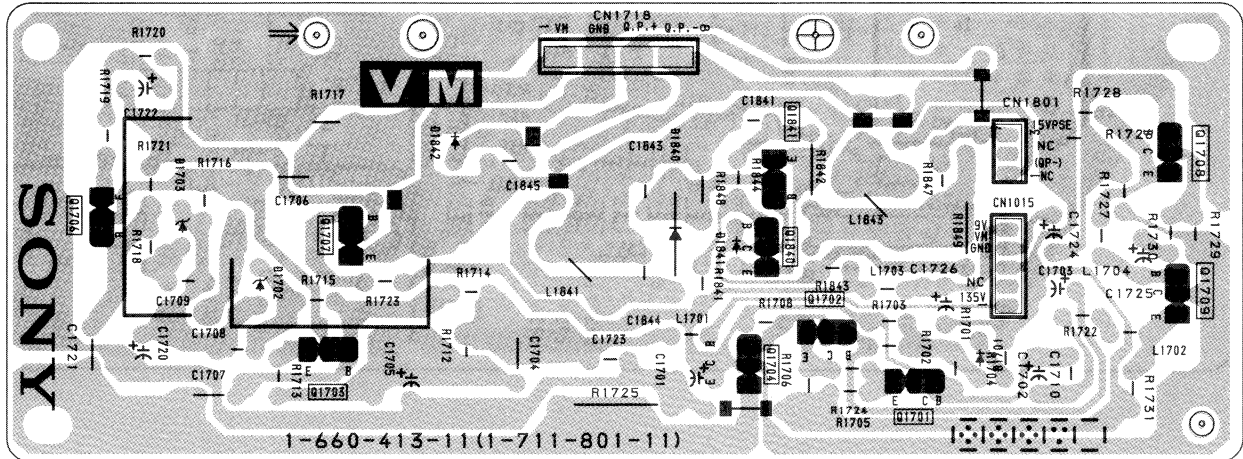
**D2**

[ ROTATION AMP ]

D2 Board



VM Board



C BOARD  
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B Base	C Collector	E Emitter	
Q702	2.0	11.4	1.4	
Q703	12.0	168.3	11.4	
Q704	168.3	6.0	163.5	
Q705	1.7	11.4	1.2	
Q706	12.0	178.8	11.4	
Q707	178.2	6.2	173.8	
Q708	2.0	11.4	1.4	
Q709	12.0	168.3	11.4	
Q710	168.0	6.4	160.0	

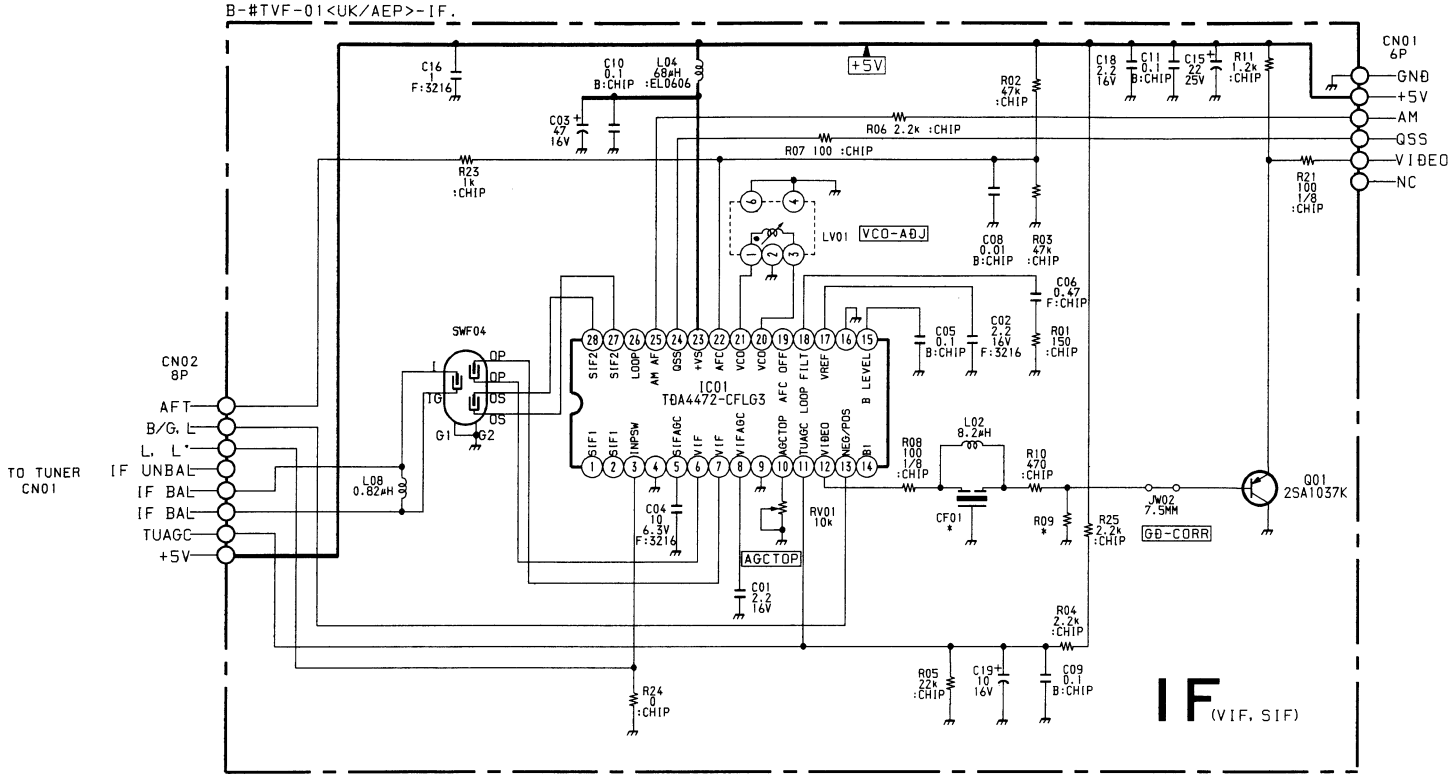
VM BOARD  
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B Base	C Collector	E Emitter	
Q1701	2.5	8.8	1.8	
Q1702	2.5	5.5	1.8	
Q1703	134.3	71.8	134.8	
Q1704	5.5	8.8	4.8	
Q1706	1.0	71.8	0.4	
Q1707	0.7	-	-	
Q1708	2.9	6.6	2.2	
Q1709	2.2	8.8	1.5	
Q1840	0.6	-	-	

D2 BOARD IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC1802	1-2	2.8
	3	3.0
	5-6	4.4
	7	6.2
	8	9.0

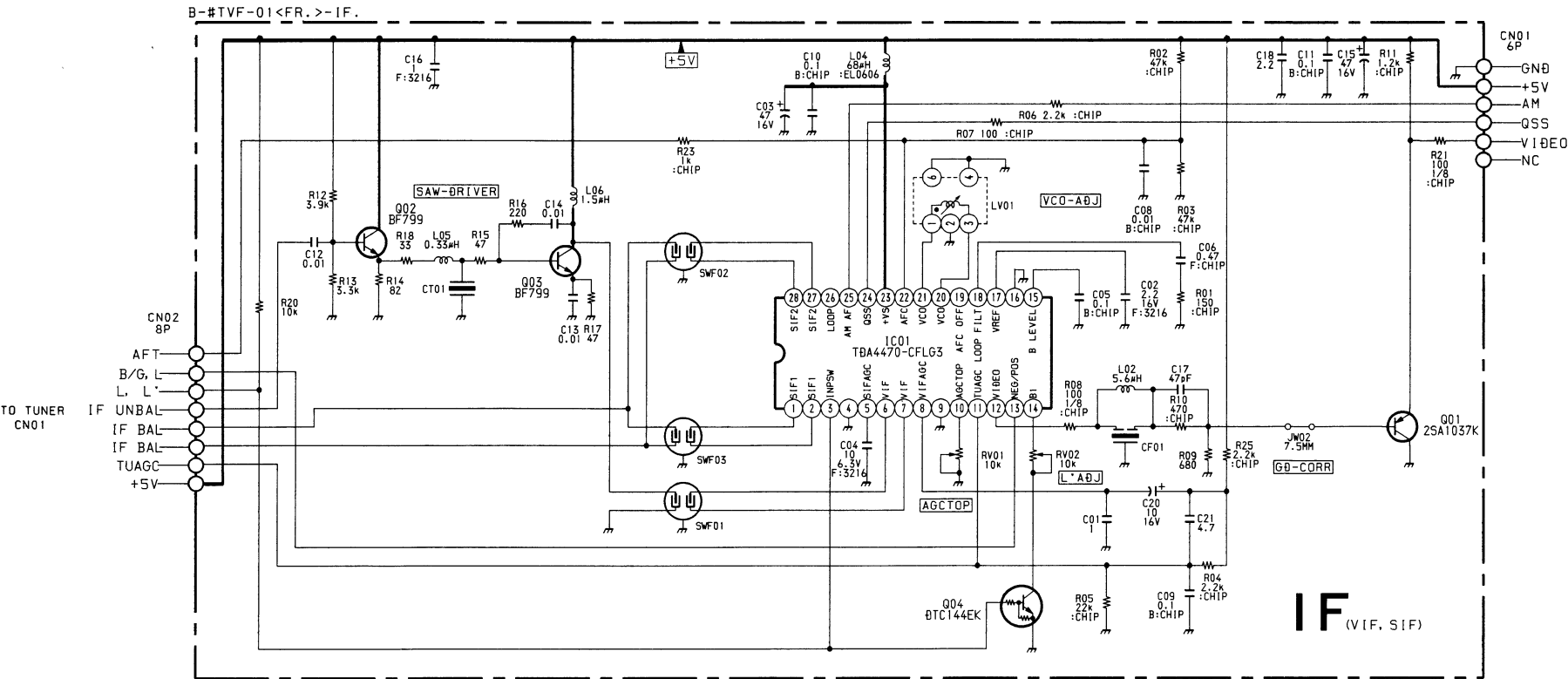
TUVIF (AEP) (KV-29X1A, 29X1D, 29X1E, 29X1K, 29X1L and 29X1R ONLY)  
TUVIF (UK) (KV-29X1U ONLY)



IF Board

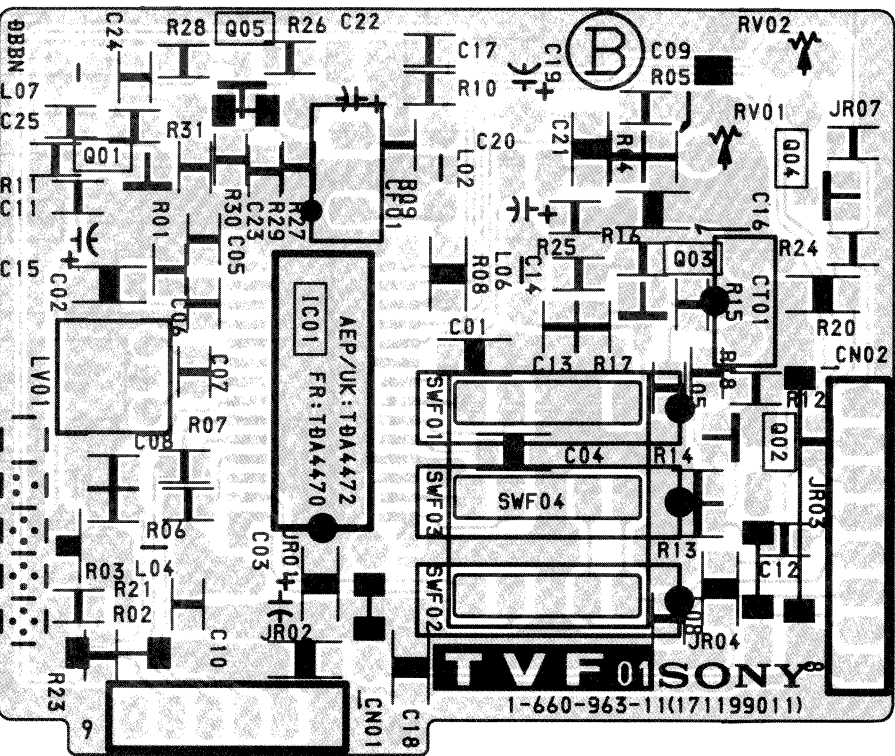
Model	29X1A	29X1D	29X1E	29X1K	29X1L	29X1R	29X1U
Ref. No.							
CF01	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz
R09	680MF	680MF	680MF	680MF	680MF	680MF	1K

TUVIF (FR) (KV-29X1B ONLY)

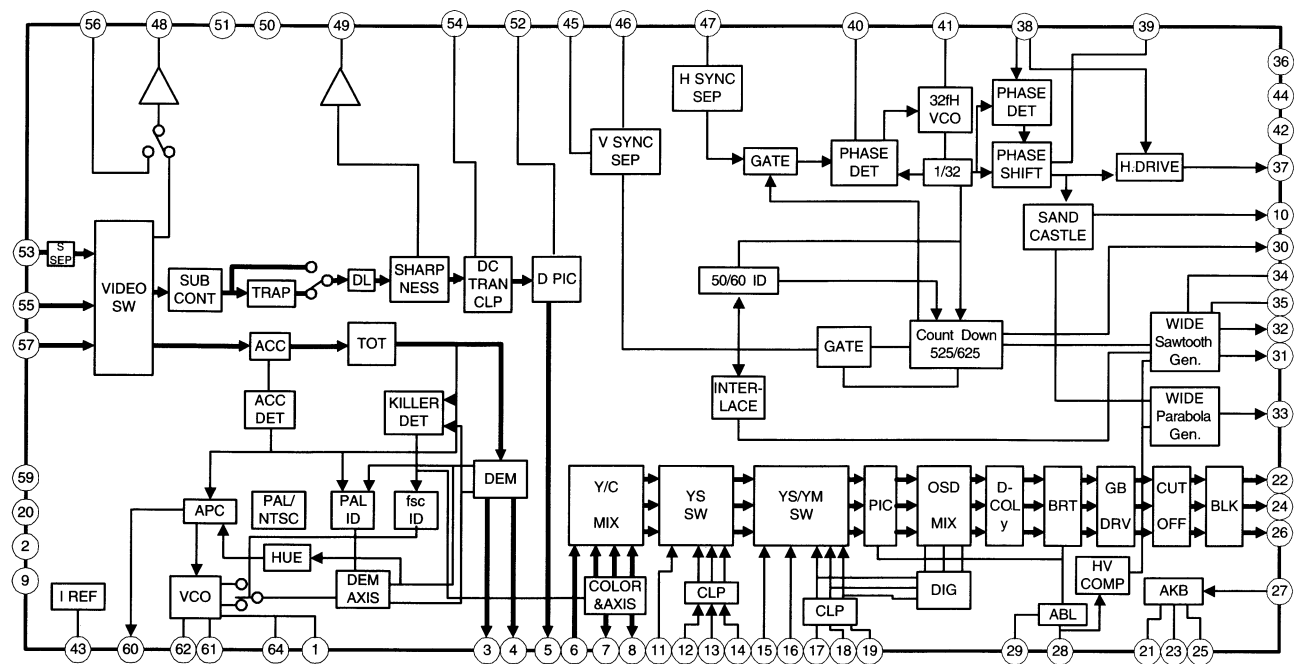


IF [ VIF, SIF ]

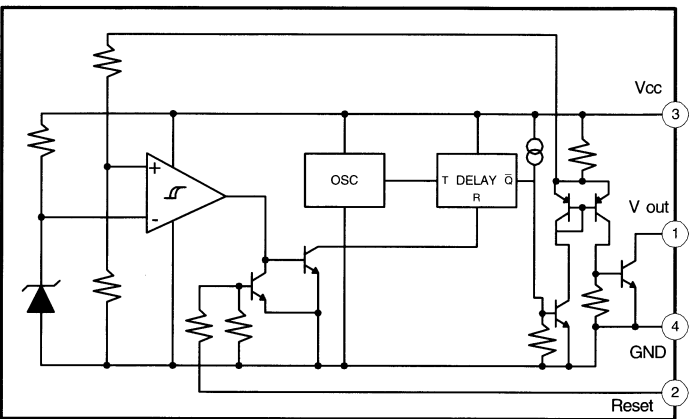
IF Board



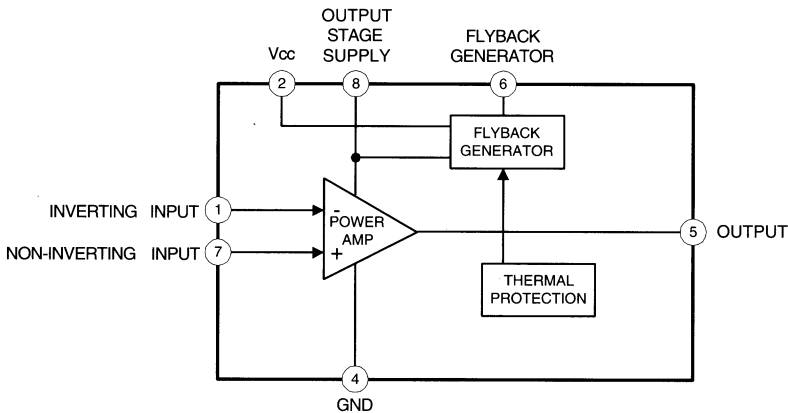
A BOARD IC301 CXA2000Q-TL



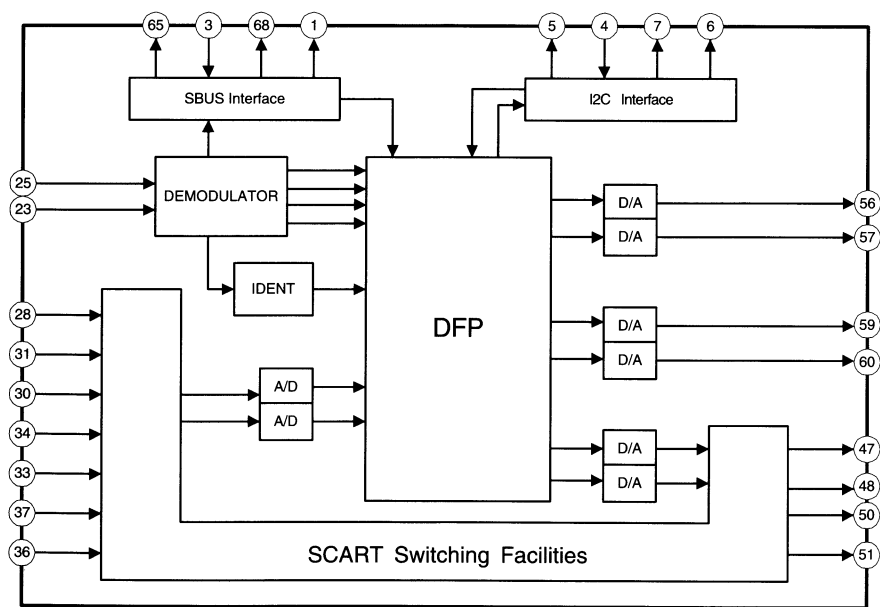
A BOARD IC4 PST593C



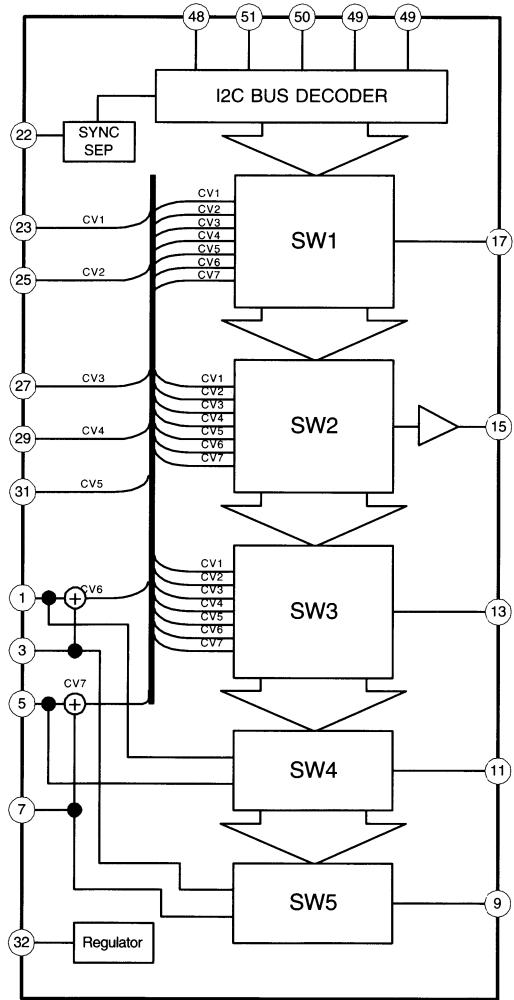
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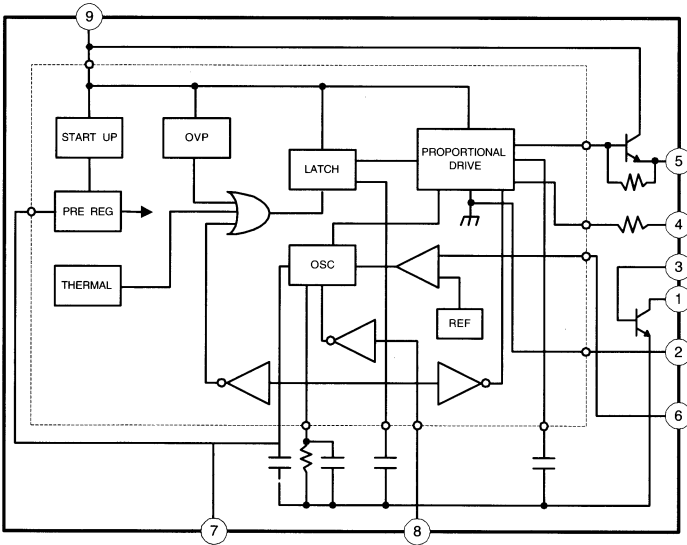
A BOARD IC202 MSP3410/MSP3400



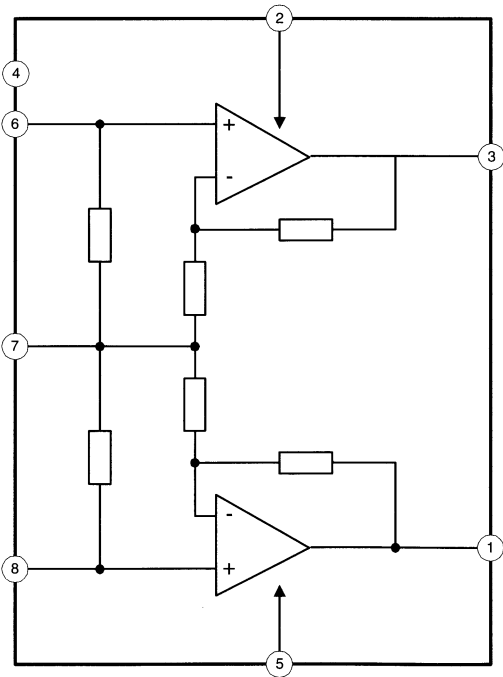
A BOARD IC201 CXA2040Q



D BOARD IC600 STR-S6708

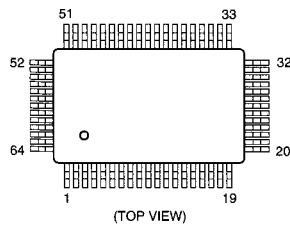


D BOARD IC1200 TDA7264

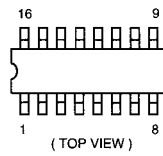


## SEMICONDUCTORS

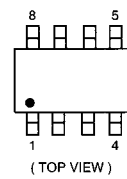
CXA2000Q-TL



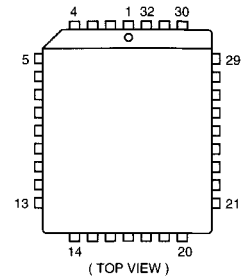
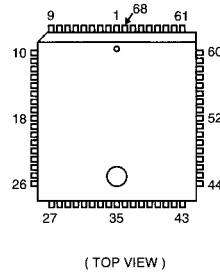
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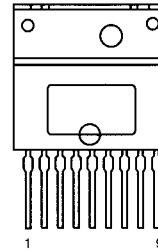
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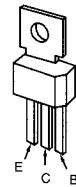
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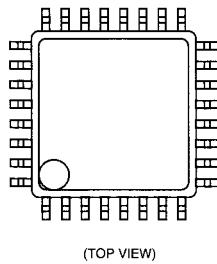
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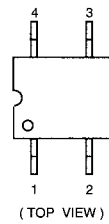
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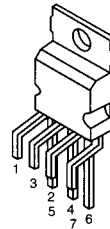
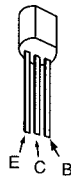
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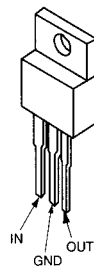
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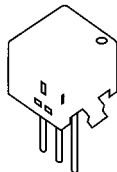
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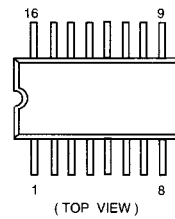
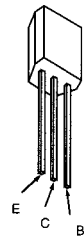
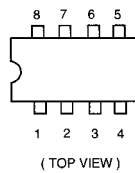
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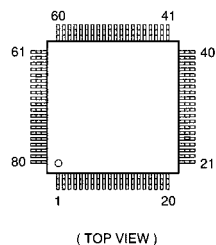
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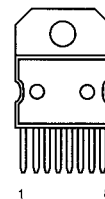
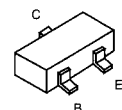
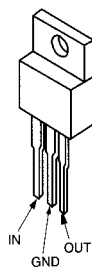
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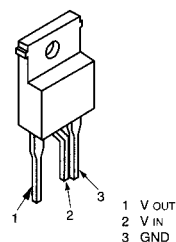
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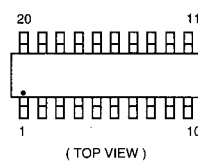
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SE135N

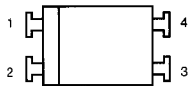


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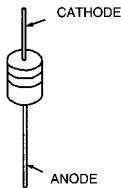
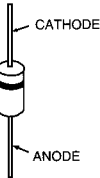
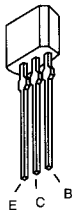


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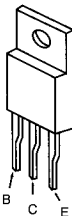


AU-01Z-V1	GP08D	MTZJ-3.6A	RD3.9ESB2
EG-1Z-V1	RGP02	MTZJ-3.9B	RD5.1ESB2
EGP20G	RGP10GPKG23	MTZJ-5.1B	RD5.6ESB2
EL1Z	RGP15GPKG23	MTZJ-5.6B	RD6.2ESB2
EM1-V1	RU3YX	MTZJ-6.2B	RD6.8ESB2
EU-1-V1	RU4AM-T3	MTZJ-6.8B	RD7.5ESB2
EU2-V1	RU4DS	MTZJ-7.5C	RD10ESB2
FML-G12S		MTZJ-9.1	RD39ES-B2
		MTZJ-T-77-9.1A	
		MTZJ-10	1SS133T-77
		MTZJ-39	

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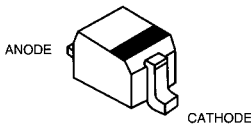


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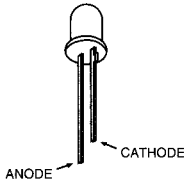


BAS216  
DTZ6.8C  
DTZ9.1  
DTZ33B

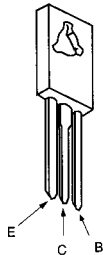
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1SS355  
UDZ-TE-17-5.6B  
UDZ-TE-17-9.1B



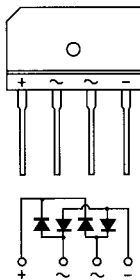
SLA-570KT3F



2SC2688-LK



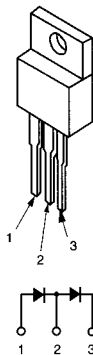
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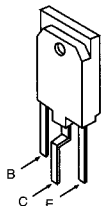
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FMS-3FU




2SC4927-01




## EXPLODED VIEWS

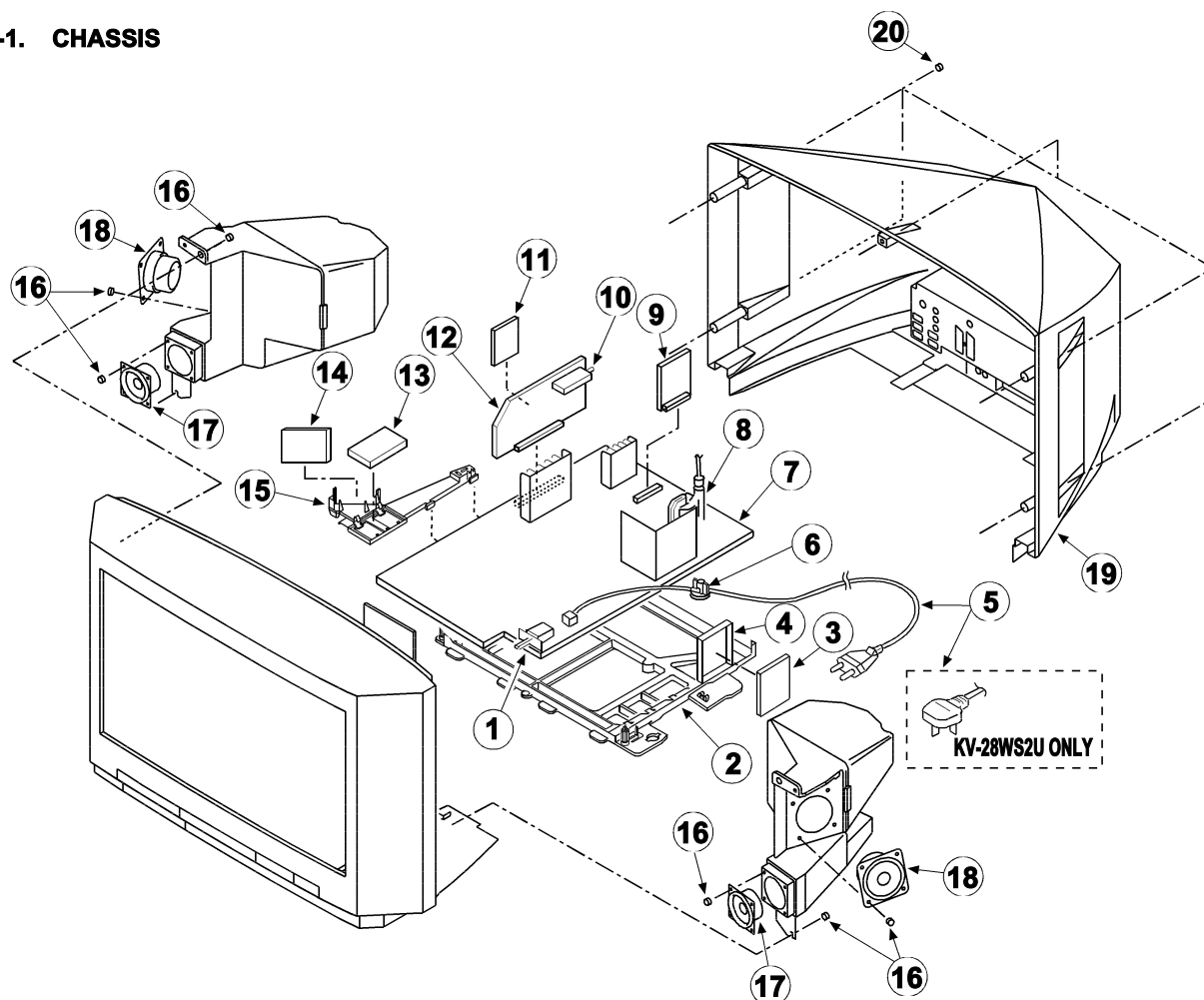
## NOTE :






- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked  are critical for safety. Replace only with the part number specified.

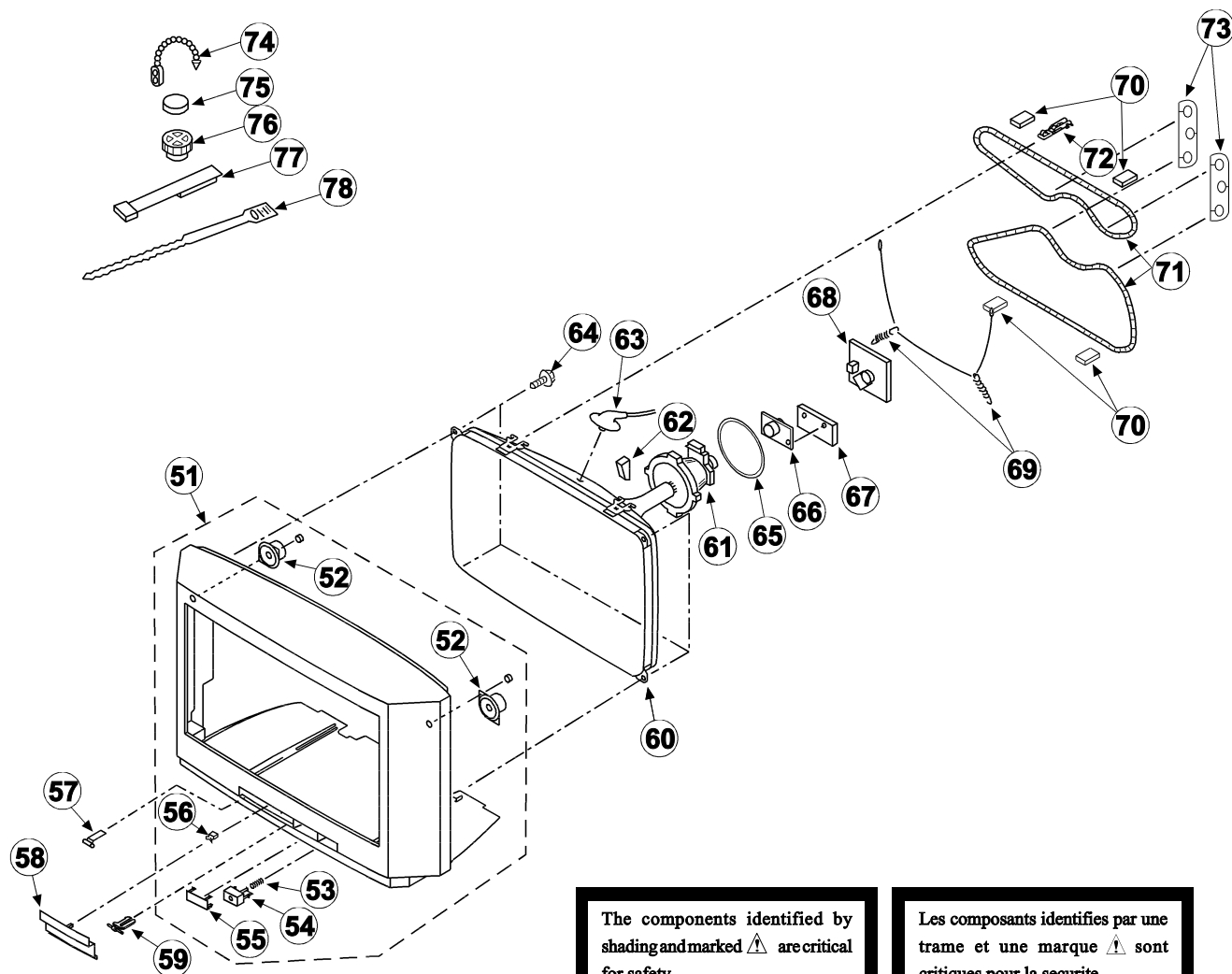
Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## 6-1. CHASSIS



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
1	 1-571-433-21	SWITCH, PUSH (AC POWER)		11	*A-1630-529-A	A1 BOARD, COMPLETE	
2	*4-203-315-01	BRACKET, MAIN		12	*A-1632-516-A	A BOARD, COMPLETE (KV-28WS2B)	
3	*A-1640-235-A	D3 BOARD, COMPLETE			*A-1632-471-A	A BOARD, COMPLETE (KV-28WS2D)	
4	*4-203-404-01	BRACKET, D3			*A-1632-517-A	A BOARD, COMPLETE (KV-28WS2E)	
5	 1-751-680-11	CORD, POWER (WITH NOISE FILTER)			*A-1632-529-A	A BOARD, COMPLETE (KV-28WS2K)	
		2.5A/250V (KV-28WS2B/28WS2D/28WS2E)			*A-1632-530-A	A BOARD, COMPLETE (KV-28WS2R)	
	 1-690-270-21	CORD, POWER (WITH CONNECTOR)			*A-1632-515-A	A BOARD, COMPLETE (KV-28WS2U)	
		2.5A/250V (KV-28WS2K/28WS2R)		13	*A-1651-088-A	J BOARD, COMPLETE	
	 1-776-204-11	CORD, POWER (FILTER)		14	*A-1649-018-A	K1 BOARD, COMPLETE	
		3.0A/250V (KV-28WS2U)		15	*4-203-537-01	BRACKET, J-K-T	
6	*4-202-531-01	AC CORD LOCK (SC)		16	4-039-355-11	SCREW (4X12), (+) BV TAPPING	
7	*A-1642-190-A	D BOARD, COMPLETE		17	1-505-154-11	SPEAKER (6.5CM)	
8	 1-453-169-11	TRANSFORMER ASSY, FLYBACK (UX-1604A2)		18	1-505-155-11	SPEAKER (10CM)	
9	*A-1640-214-A	D2 BOARD, COMPLETE		19	4-203-543-01	COVER, REAR	
10	1-693-340-11	TUNER/VIF (FR) (KV-28WS2B)		20	4-039-358-01	SCREW (4X16), (+) BV TAPPING	
	1-693-338-11	TUNER/VIF (AEP)					
		(KV-28WS2D/28WS2E/28WS2K/28WS2R)					
	1-693-339-11	TUNER/VIF (UK) (KV-28WS2U)					

## PICTURE TUBE



The components identified by shading and marked ▲ are critical for safety.

Replace only with the part number specified.

Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
51	A-1603-045-A	BEZNET ASSY	52-56	67	*A-1644-070-A	VM BOARD, COMPLETE	
52	1-504-418-21	SPEAKER (5CM)		68	*A-1638-079-A	C BOARD, COMPLETE	
53	4-202-964-01	SPRING		69	4-369-318-31	SPRING, TENSION	
54	4-203-540-01	BUTTON, POWER		70	*4-203-390-01	CUSHION, DGC	
55	4-203-539-01	WINDOW ORNAMENTAL		71	▲ 1-411-893-11	COIL DEGAUSSING	
56	4-047-464-01	CATCHER PUSH		72	4-202-463-01	CLIP, DGC (25°)	
57	4-045-250-01	DAMPER		73	*4-050-252-01	SPACER, DGC	
58	4-203-542-01	DOOR, CONTROL		74	4-308-870-00	CLIP, LEAD WIRE	
59	4-202-555-01	SHAFT, DOOR		75	1-452-032-00	MAGNET, DISK; 10MM Ø	
60	▲ 8-737-763-05	PICTURE TUBE (SD-284T) (W66LGY011X)		76	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
61	▲ 8-451-434-21	DEFLECTION YOKE (Y28G1A-B)		77	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
62	3-704-495-01	SPACER, DY		78	3-701-007-00	BAND, BINDING	
63	▲ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE					
64	4-036-188-01	SCREW (M), PT					
65	1-452-724-22	COIL, NA ROTATION (RT-165)					
66	▲ 8-453-005-61	NECK ASSY PICTURE TUBE (NA297-M6)					

## SECTION 7

### ELECTRICAL PARTS LIST

The components identified by shading and marked  $\Delta$  are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

When indicating parts by reference number, please include the board name.

## CAPACITORS

## COILS

MF : mF, PF : mmF

MMH : mH,  $\mu$ H :  $\mu$ H

- All variable and adjustable resistors

## RESISTORS

- All resistors are in ohms
- F : nonflammable

A1

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1630-529-A	A1 BOARD, COMPLETE *****					
		< CAPACITOR >				< DIODE >	
C1201	1-164-695-11	CERAMIC CHIP 0.0022MF	5%	D1201	8-719-988-62	DIODE 1S8355	
C1202	1-163-038-00	CERAMIC CHIP 0.1MF				< IC >	
C1203	1-163-038-00	CERAMIC CHIP 0.1MF		IC1201	8-759-377-62	IC DSP56004-FJ66R2	
C1204	1-163-038-00	CERAMIC CHIP 0.1MF		IC1202	8-759-349-93	IC KM62256CLG-7	
C1205	1-163-038-00	CERAMIC CHIP 0.1MF		IC1203	8-759-384-64	IC TDA1387T/N1/T3	
				IC1204	8-759-384-64	IC TDA1387T/N1/T3	
C1206	1-163-038-00	CERAMIC CHIP 0.1MF		IC1205	8-759-387-76	IC TL072CDR	
C1207	1-163-038-00	CERAMIC CHIP 0.1MF		IC1206	8-759-387-76	IC TL072CDR	
C1208	1-163-038-00	CERAMIC CHIP 0.1MF		IC1207	8-759-991-41	IC L78L05ACZ	
C1209	1-163-038-00	CERAMIC CHIP 0.1MF				< COIL >	
C1210	1-163-038-00	CERAMIC CHIP 0.1MF		L1204	1-410-989-11	INDUCTOR CHIP 0.47UH	
				L1205	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1211	1-163-038-00	CERAMIC CHIP 0.1MF		L1206	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1212	1-126-933-11	ELECT 100MF	20%	L1207	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1215	1-126-967-11	ELECT 47MF	20%	L1208	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1216	1-163-038-00	CERAMIC CHIP 0.1MF		L1209	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1217	1-163-038-00	CERAMIC CHIP 0.1MF		L1210	1-410-989-11	INDUCTOR CHIP 0.47UH	
				L1211	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1218	1-126-964-11	ELECT 10MF	20%	L1212	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1219	1-126-967-11	ELECT 47MF	20%	L1213	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1220	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	L1220	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1221	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	L1221	1-410-989-11	INDUCTOR CHIP 0.47UH	
C1222	1-163-038-00	CERAMIC CHIP 0.1MF				< TRANSISTOR >	
C1223	1-126-967-11	ELECT 47MF	20%	Q1201	8-729-902-99	TRANSISTOR DTC114TK	
C1224	1-126-967-11	ELECT 47MF	20%			< RESISTOR >	
C1225	1-163-038-00	CERAMIC CHIP 0.1MF		R1202	1-216-025-00	METAL GLAZE 100 5% 1/10W	
C1226	1-163-038-00	CERAMIC CHIP 0.1MF		R1204	1-216-025-00	METAL GLAZE 100 5% 1/10W	
C1227	1-126-964-11	ELECT 10MF	20%	R1205	1-216-025-00	METAL GLAZE 100 5% 1/10W	
				R1206	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C1228	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	R1207	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C1229	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	R1208	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C1230	1-163-038-00	CERAMIC CHIP 0.1MF		R1209	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C1231	1-126-967-11	ELECT 47MF	20%	R1210	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C1232	1-163-038-00	CERAMIC CHIP 0.1MF		R1211	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R1212	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C1233	1-126-967-11	ELECT 47MF	20%	R1213	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
C1236	1-126-967-11	ELECT 47MF	20%	R1214	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
C1237	1-163-038-00	CERAMIC CHIP 0.1MF		R1215	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
C1238	1-163-038-00	CERAMIC CHIP 0.1MF		R1220	1-216-001-00	METAL GLAZE 10 5% 1/10W	
		< CONNECTOR >					
CN1202	1-766-929-11	CONNECTOR, BOARD TO BOARD 8P					
CN1203	1-766-929-11	CONNECTOR, BOARD TO BOARD 8P					
CN1204	*1-564-519-11	PLUG, CONNECTOR 4P					

## KV-28WS2

A1

A

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1221	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1222	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1223	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1224	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R1225	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1226	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R1227	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1228	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1229	1-216-001-00	METAL GLAZE 10 5%	1/10W
R1230	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1231	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R1232	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1233	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R1234	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1235	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1236	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1237	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1238	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1239	1-216-025-00	METAL GLAZE 100 5%	1/10W
*****			
	*A-1632-516-A	A BOARD, COMPLETE (KV-28WS2B)	
		*****	
	*A-1632-471-A	A BOARD, COMPLETE (KV-28WS2D)	
		*****	
	*A-1632-517-A	A BOARD, COMPLETE (KV-28WS2E)	
		*****	
	*A-1632-529-A	A BOARD, COMPLETE (KV-28WS2K)	
		*****	
	*A-1632-530-A	A BOARD, COMPLETE (KV-28WS2R)	
		*****	
	*A-1632-515-A	A BOARD, COMPLETE (KV-28WS2U)	
		*****	
	1-750-797-11	SOCKET, PLCC	
	< CAPACITOR >		
C1	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C2	1-126-965-11	ELECT 22MF	20% 50V
C3	1-163-104-00	CERAMIC CHIP 30PF	5% 50V
C4	1-163-104-00	CERAMIC CHIP 30PF	5% 50V
C8	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C10	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C11	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C14	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C15	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C18	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C20	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C21	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C22	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C43	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C45	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C80	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C81	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C82	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C90	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C101	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C102	1-126-934-11	ELECT 220MF	20% 16V
C103	1-126-965-11	ELECT 22MF	20% 50V
C104	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C110	1-126-967-11	ELECT 47MF	20% 16V
C112	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C113	1-126-967-11	ELECT 47MF	20% 16V
C115	1-102-112-00	CERAMIC 330PF	10% 50V
			(KV-28WS2B)
C120	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C121	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C122	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C123	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C124	1-137-399-11	FILM 0.1MF	5% 50V
C201	1-163-139-00	CERAMIC CHIP 820PF	10% 50V
C202	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C203	1-126-933-11	ELECT 100MF	20% 16V
C204	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C205	1-126-965-11	ELECT 22MF	20% 50V
C206	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C207	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C208	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C209	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C210	1-216-295-00	METAL GLAZE 0 5%	1/10W
C211	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C212	1-164-346-11	CERAMIC CHIP 1MF	16V
C213	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C214	1-164-346-11	CERAMIC CHIP 1MF	16V
C215	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C216	1-126-967-11	ELECT 47MF	20% 16V
C217	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C218	1-126-967-11	ELECT 47MF	20% 16V
C219	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C220	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C221	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C222	1-164-346-11	CERAMIC CHIP 1MF	16V
C223	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C224	1-164-346-11	CERAMIC CHIP 1MF	16V
C225	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C226	1-126-967-11	ELECT 47MF	20% 16V
C227	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C228	1-126-967-11	ELECT 47MF	20% 16V
C229	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C230	1-216-295-00	METAL GLAZE 0 5%	1/10W
C231	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C232	1-126-967-11	ELECT 47MF	20% 16V
C251	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C252	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C253	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C254	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C255	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C256	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C257	1-126-965-11	ELECT 22MF	20% 50V
C258	1-126-964-11	ELECT 10MF	20% 50V
C259	1-164-336-11	CERAMIC CHIP 0.33MF	25V
C260	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C261	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C262	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C263	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C264	1-126-962-11	ELECT 3.3MF	20% 50V
C265	1-126-964-11	ELECT 10MF	20% 50V
C266	1-126-964-11	ELECT 10MF	20% 50V
C267	1-126-965-11	ELECT 22MF	20% 50V
C268	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C269	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C270	1-163-131-00	CERAMIC CHIP 390PF	5% 50V

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C271	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C354	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C272	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C355	1-126-965-11	ELECT 22MF	20% 50V
C273	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C356	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C274	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C357	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C275	1-164-346-11	CERAMIC CHIP 1MF	16V	C358	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C276	1-164-346-11	CERAMIC CHIP 1MF	16V	C359	1-163-231-11	CERAMIC CHIP 15PF	5% 50V
C277	1-164-346-11	CERAMIC CHIP 1MF	16V	C360	1-163-231-11	CERAMIC CHIP 15PF	5% 50V
C278	1-164-346-11	CERAMIC CHIP 1MF	16V	C370	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C279	1-126-965-11	ELECT 22MF	20% 50V		(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)		
C280	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C371	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C281	1-126-965-11	ELECT 22MF	20% 50V	C372	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C282	1-163-038-00	CERAMIC CHIP 0.1MF	25V		(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)		
C300	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C373	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C301	1-163-038-00	CERAMIC CHIP 0.1MF	25V		(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)		
C302	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C1001	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C303	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C1002	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C304	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C1010	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C305	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C1013	1-126-965-11	ELECT 22MF	20% 50V
C306	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C1014	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C307	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C1015	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C308	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C1020	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C309	1-164-346-11	CERAMIC CHIP 1MF	16V	< FILTER >			
C310	1-164-346-11	CERAMIC CHIP 1MF	16V	CF120	1-409-327-00	TRAP, CERAMIC (6.5MHz) (KV-28WS2B)	
C311	1-164-346-11	CERAMIC CHIP 1MF	16V	< CONNECTOR >			
C312	1-164-505-11	CERAMIC CHIP 2.2MF	16V	CN1	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P	
C313	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	CN2	*1-568-880-51	PIN, CONNECTOR 5P	
C315	1-216-295-00	METAL GLAZE 0	5% 1/10W	CN4	1-568-878-51	PIN, CONNECTOR 3P	
C317	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN201	1-766-296-11	CONNECTOR, DUAL SCART	
C319	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	CN202	1-766-928-11	CONNECTOR, BOARD TO BOARD 8P	
C320	1-126-965-11	ELECT 22MF	20% 50V	CN203	1-766-928-11	CONNECTOR, BOARD TO BOARD 8P	
C321	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	CN301	*1-568-882-51	PIN, CONNECTOR 7P	
C322	1-163-037-11	CERAMIC CHIP 0.22MF	10% 50V	< DIODE >			
C323	1-163-037-11	CERAMIC CHIP 0.22MF	10% 50V	D2	8-719-988-62	DIODE 1S8355	
C324	1-163-037-11	CERAMIC CHIP 0.22MF	10% 50V	D10	8-719-158-15	DIODE RD5.68-B	
C325	1-164-346-11	CERAMIC CHIP 1MF	16V	D11	8-719-158-15	DIODE RD5.68-B	
C326	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	D12	8-719-158-15	DIODE RD5.68-B	
C327	1-137-374-11	FILM 0.047MF	5% 50V	D101	8-719-977-81	DIODE DTZ33B	
C328	1-126-964-11	ELECT 10MF	20% 50V	D201	8-719-977-22	DIODE DTZ9.1	
C329	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	D202	8-719-977-22	DIODE DTZ9.1	
C330	1-130-777-00	FILM 0.1MF	5% 63V	D203	8-719-977-22	DIODE DTZ9.1	
C331	1-137-581-11	FILM 0.1MF	5% 100V	D204	8-719-977-22	DIODE DTZ9.1	
C332	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	D205	8-719-977-22	DIODE DTZ9.1	
C333	1-126-933-11	ELECT 100MF	20% 16V	D206	8-719-977-22	DIODE DTZ9.1	
C334	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	D207	8-719-977-22	DIODE DTZ9.1	
C335	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	D208	8-719-977-22	DIODE DTZ9.1	
C336	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	D209	8-719-977-22	DIODE DTZ9.1	
C337	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	D210	8-719-977-22	DIODE DTZ9.1	
C338	1-164-346-11	CERAMIC CHIP 1MF	16V	D211	8-719-977-22	DIODE DTZ9.1	
C339	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	D212	8-719-977-22	DIODE DTZ9.1	
C340	1-126-933-11	ELECT 100MF	20% 16V	D213	8-719-977-22	DIODE DTZ9.1	
C341	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D214	8-719-977-22	DIODE DTZ9.1	
C342	1-164-346-11	CERAMIC CHIP 1MF	16V	D215	8-719-977-22	DIODE DTZ9.1	
C343	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	D216	8-719-158-15	DIODE RD5.68-B	
C344	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	D217	8-719-158-15	DIODE RD5.68-B	
C347	1-164-005-11	CERAMIC CHIP 0.47MF	25V	D218	8-719-158-15	DIODE RD5.68-B	
C348	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D220	8-719-988-62	DIODE 1S8355	
C350	1-126-964-11	ELECT 10MF	20% 50V	D221	8-719-988-62	DIODE 1S8355	
C351	1-164-505-11	CERAMIC CHIP 2.2MF	16V				
C352	1-164-005-11	CERAMIC CHIP 0.47MF	25V				
C353	1-164-505-11	CERAMIC CHIP 2.2MF	16V				

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D222	8-719-977-22	DIODE DTZ9.1		Q130	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS2B)	
D223	8-719-977-22	DIODE DTZ9.1		Q201	8-729-920-74	TRANSISTOR 2SC2412K-QR	
D224	8-719-977-22	DIODE DTZ9.1		Q202	8-729-920-74	TRANSISTOR 2SC2412K-QR	
D225	8-719-977-22	DIODE DTZ9.1		Q205	8-729-901-01	TRANSISTOR DTC144EK	
D226	8-719-977-22	DIODE DTZ9.1		Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
D227	8-719-977-13	DIODE DTZ-6.8C		Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
D251	8-719-047-16	DIODE BAS216		Q300	8-729-901-01	TRANSISTOR DTC144EK	
D320	8-719-977-22	DIODE DTZ9.1		Q304	8-729-920-74	TRANSISTOR 2SC2412K-QR	
D370	8-719-047-16	DIODE BAS216		Q305	8-729-920-74	TRANSISTOR 2SC2412K-QR	
		(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)		Q306	8-729-901-01	TRANSISTOR DTC144EK	
D1010	8-719-036-58	DIODE MA3030-B(TX)		Q330	8-729-216-22	TRANSISTOR 2SA1162-G	
	< LINE FILTER >			Q331	8-729-920-74	TRANSISTOR 2SC2412K-QR	
FL101	1-236-071-11	ENCAPSULATED COMPONENT		Q332	8-729-920-74	TRANSISTOR 2SC2412K-QR	
FL201	1-236-071-11	ENCAPSULATED COMPONENT		Q1001	8-729-901-01	TRANSISTOR DTC144EK	
FL202	1-236-071-11	ENCAPSULATED COMPONENT		Q1002	8-729-216-22	TRANSISTOR 2SA1162-G	
FL203	1-236-071-11	ENCAPSULATED COMPONENT			< RESISTOR >		
FL1001	1-236-071-11	ENCAPSULATED COMPONENT		JR101	1-216-295-00	METAL GLAZE 0 5% 1/10W	
	< IC >			JR201	1-216-295-00	METAL GLAZE 0 5% 1/10W	
IC1	8-759-376-75	IC SDA5250M-C5-GE9		JR204	1-216-295-00	METAL GLAZE 0 5% 1/10W	
IC2	8-759-334-20	IC ST24E32M6TR		JR205	1-216-295-00	METAL GLAZE 0 5% 1/10W	
IC3	8-759-353-82	IC TMS27PC020-15FML		JR206	1-216-295-00	METAL GLAZE 0 5% 1/10W	
IC4	8-759-394-57	IC PST593C-MMP-4P		JR207	1-216-295-00	METAL GLAZE 0 5% 1/10W	
IC201	8-752-076-06	IC CXA2040Q-T4		JR304	1-216-296-91	METAL GLAZE 0 5% 1/8W	
				JR305	1-216-296-91	METAL GLAZE 0 5% 1/8W	
IC202	8-759-376-80	IC MSP3410B-P8-F7-T		R1	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		(KV-28WS2B/28WS2E/28WS2U)		R2	1-216-025-00	METAL GLAZE 100 5% 1/10W	
	8-759-376-56	IC MSP3400C-P8-C6-T		R3	1-216-025-00	METAL GLAZE 100 5% 1/10W	
		(KV-28WS2D/28WS2K/28WS2R)		R4	1-216-013-00	METAL GLAZE 33 5% 1/10W	
IC203	8-759-385-76	IC MC14052BDR2		R5	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
IC301	8-752-076-09	IC CXA2000Q-TL		R7	1-216-041-00	METAL GLAZE 470 5% 1/10W	
IC302	8-759-288-85	IC TDA4665T-T		R8	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
IC303	8-759-251-56	IC TDA8395T/N3		R9	1-216-041-00	METAL GLAZE 470 5% 1/10W	
		(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)		R10	1-216-041-00	METAL GLAZE 470 5% 1/10W	
IC1001	8-759-376-76	IC SDA5273CP-GE9		R11	1-216-041-00	METAL GLAZE 470 5% 1/10W	
	< COIL >			R12	1-216-041-00	METAL GLAZE 470 5% 1/10W	
L10	1-410-379-31	INDUCTOR CHIP 6.8UH		R18	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L102	1-408-406-00	INDUCTOR 5.6UH (KV-28WS2B)		R19	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L111	1-410-993-11	INDUCTOR CHIP 1UH		R20	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L120	1-408-408-00	INDUCTOR 8.2UH		R21	1-216-025-00	METAL GLAZE 100 5% 1/10W	
L121	1-408-397-00	INDUCTOR 1UH		R24	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
L122	1-408-408-00	INDUCTOR 8.2UH		R25	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
L300	1-408-607-31	INDUCTOR 2.2UH		R28	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
	< TRANSISTOR >			R29	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q1	8-729-920-74	TRANSISTOR 2SC2412K-QR		R30	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q4	8-729-920-74	TRANSISTOR 2SC2412K-QR		R31	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q15	8-729-216-22	TRANSISTOR 2SA1162-G		R32	1-216-025-00	METAL GLAZE 100 5% 1/10W	
Q17	8-729-216-22	TRANSISTOR 2SA1162-G		R33	1-216-025-00	METAL GLAZE 100 5% 1/10W	
Q80	8-729-920-74	TRANSISTOR 2SC2412K-QR		R34	1-216-025-00	METAL GLAZE 100 5% 1/10W	
				R35	1-216-025-00	METAL GLAZE 100 5% 1/10W	
Q81	8-729-216-22	TRANSISTOR 2SA1162-G		R36	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q110	8-729-920-74	TRANSISTOR 2SC2412K-QR		R37	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q111	8-729-216-22	TRANSISTOR 2SA1162-G		R38	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q112	8-729-920-74	TRANSISTOR 2SC2412K-QR		R39	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q113	8-729-216-22	TRANSISTOR 2SA1162-G		R40	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
Q114	8-729-216-22	TRANSISTOR 2SA1162-G		R42	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
Q120	8-729-920-74	TRANSISTOR 2SC2412K-QR		R44	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
Q121	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS2B)		R46	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
Q122	8-729-920-74	TRANSISTOR 2SC2412K-QR		R47	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q124	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS2B)		R48	1-216-121-91	METAL GLAZE 1M 5% 1/10W	

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R49	1-216-025-00	METAL GLAZE	100 5% 1/10W	R118	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R50	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R119	1-216-033-00	METAL GLAZE	220 5% 1/10W
R51	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R120	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R52	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R121	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R53	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R122	1-216-041-00	METAL GLAZE	470 5% 1/10W
R54	1-216-025-00	METAL GLAZE	100 5% 1/10W	R123	1-216-031-00	METAL GLAZE	180 5% 1/10W
R58	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W	R124	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R59	1-216-025-00	METAL GLAZE	100 5% 1/10W	R125	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R60	1-216-025-00	METAL GLAZE	100 5% 1/10W	R126	1-216-025-00	METAL GLAZE	100 5% 1/10W
R61	1-216-025-00	METAL GLAZE	100 5% 1/10W	R127	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R62	1-216-025-00	METAL GLAZE	100 5% 1/10W	R128	1-216-035-00	METAL GLAZE	270 5% 1/10W
R63	1-216-025-00	METAL GLAZE	100 5% 1/10W	R129	1-216-037-00	METAL GLAZE	330 5% 1/10W
R64	1-216-025-00	METAL GLAZE	100 5% 1/10W	R130	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R65	1-216-025-00	METAL GLAZE	100 5% 1/10W	R131	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R66	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R132	1-216-025-00	METAL GLAZE	100 5% 1/10W
R67	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R133	1-216-041-00	METAL GLAZE	470 5% 1/10W
R69	1-216-025-00	METAL GLAZE	100 5% 1/10W	R134	1-216-001-00	METAL GLAZE	10 5% 1/10W
R70	1-216-025-00	METAL GLAZE	100 5% 1/10W	R135	1-216-045-00	METAL GLAZE	680 5% 1/10W
R71	1-216-025-00	METAL GLAZE	100 5% 1/10W	R136	1-216-033-00	METAL GLAZE	220 5% 1/10W
R72	1-216-025-00	METAL GLAZE	100 5% 1/10W	R137	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R73	1-216-025-00	METAL GLAZE	100 5% 1/10W	R138	1-216-041-00	METAL GLAZE	470 5% 1/10W
R74	1-216-025-00	METAL GLAZE	100 5% 1/10W	R200	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R75	1-216-025-00	METAL GLAZE	100 5% 1/10W	R201	1-216-033-00	METAL GLAZE	220 5% 1/10W
R76	1-216-025-00	METAL GLAZE	100 5% 1/10W	R202	1-216-033-00	METAL GLAZE	220 5% 1/10W
R77	1-216-025-00	METAL GLAZE	100 5% 1/10W	R203	1-216-025-00	METAL GLAZE	100 5% 1/10W
R78	1-216-025-00	METAL GLAZE	100 5% 1/10W	R204	1-216-025-00	METAL GLAZE	100 5% 1/10W
R79	1-216-033-00	METAL GLAZE	220 5% 1/10W	R205	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R80	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R206	1-216-033-00	METAL GLAZE	220 5% 1/10W
R81	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R208	1-216-041-00	METAL GLAZE	470 5% 1/10W
R82	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R209	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R83	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R210	1-216-017-91	METAL GLAZE	47 5% 1/10W
R84	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R211	1-216-033-00	METAL GLAZE	220 5% 1/10W
R85	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R212	1-216-022-00	METAL GLAZE	75 5% 1/10W
R86	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R213	1-216-022-00	METAL GLAZE	75 5% 1/10W
R87	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R214	1-216-025-00	METAL GLAZE	100 5% 1/10W
R88	1-216-025-00	METAL GLAZE	100 5% 1/10W	R216	1-216-025-00	METAL GLAZE	100 5% 1/10W
R91	1-216-025-00	METAL GLAZE	100 5% 1/10W	R217	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R92	1-216-025-00	METAL GLAZE	100 5% 1/10W	R218	1-216-025-00	METAL GLAZE	100 5% 1/10W
R93	1-216-033-00	METAL GLAZE	220 5% 1/10W	R219	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R94	1-216-033-00	METAL GLAZE	220 5% 1/10W	R220	1-216-295-00	METAL GLAZE	0 5% 1/10W
R95	1-216-033-00	METAL GLAZE	220 5% 1/10W	R221	1-216-039-00	METAL GLAZE	390 5% 1/10W
R97	1-216-295-00	METAL GLAZE	0 5% 1/10W	R222	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R98	1-216-295-00	METAL GLAZE	0 5% 1/10W	R223	1-216-295-00	METAL GLAZE	0 5% 1/10W
R101	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R224	1-216-039-00	METAL GLAZE	390 5% 1/10W
R102	1-216-025-00	METAL GLAZE	100 5% 1/10W	R225	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R103	1-216-025-00	METAL GLAZE	100 5% 1/10W	R226	1-216-033-00	METAL GLAZE	220 5% 1/10W
R104	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R227	1-216-022-00	METAL GLAZE	75 5% 1/10W
R105	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R228	1-216-022-00	METAL GLAZE	75 5% 1/10W
R106	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R229	1-216-033-00	METAL GLAZE	220 5% 1/10W
R110	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R230	1-216-022-00	METAL GLAZE	75 5% 1/10W
R111	1-216-029-00	METAL GLAZE	150 5% 1/10W	R232	1-216-025-00	METAL GLAZE	100 5% 1/10W
R112	1-216-029-00	METAL GLAZE	150 5% 1/10W	R233	1-216-025-00	METAL GLAZE	100 5% 1/10W
R113	1-216-001-00	METAL GLAZE	10 5% 1/10W	R234	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R114	1-216-029-00	METAL GLAZE	150 5% 1/10W	R235	1-216-025-00	METAL GLAZE	100 5% 1/10W
R115	1-216-037-00	METAL GLAZE	330 5% 1/10W	R236	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R116	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R237	1-216-295-00	METAL GLAZE	0 5% 1/10W
R117	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R238	1-216-089-00	METAL GLAZE	47K 5% 1/10W
		(KV-28WS2B/28WS2D/28WS2R/28WS2K/28WS2R)		R239	1-216-039-00	METAL GLAZE	390 5% 1/10W
	1-216-056-00	METAL GLAZE	2.0K 5% 1/10W	R240	1-216-295-00	METAL GLAZE	0 5% 1/10W
		(KV-28WS2U)		R241	1-216-089-00	METAL GLAZE	47K 5% 1/10W



## KV-28WS2

A

C

REF.NO.	PART NO.	DESCRIPTION	REMARK
R242	1-216-039-00	METAL GLAZE 390 5%	1/10W
R243	1-216-033-00	METAL GLAZE 220 5%	1/10W
R244	1-216-033-00	METAL GLAZE 220 5%	1/10W
R245	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R246	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R247	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R249	1-216-001-00	METAL GLAZE 10 5%	1/10W
R251	1-216-025-00	METAL GLAZE 100 5%	1/10W
R252	1-216-025-00	METAL GLAZE 100 5%	1/10W
R253	1-216-025-00	METAL GLAZE 100 5%	1/10W
R254	1-216-025-00	METAL GLAZE 100 5%	1/10W
R255	1-216-025-00	METAL GLAZE 100 5%	1/10W
R256	1-216-025-00	METAL GLAZE 100 5%	1/10W
R270	1-216-022-00	METAL GLAZE 75 5%	1/10W
R271	1-216-022-00	METAL GLAZE 75 5%	1/10W
R272	1-216-022-00	METAL GLAZE 75 5%	1/10W
R273	1-216-022-00	METAL GLAZE 75 5%	1/10W
R280	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R281	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R282	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R284	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R285	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R300	1-216-025-00	METAL GLAZE 100 5%	1/10W
R301	1-216-033-00	METAL GLAZE 220 5%	1/10W
R302	1-216-295-00	METAL GLAZE 0 5%	1/10W
R303	1-216-295-00	METAL GLAZE 0 5%	1/10W
R308	1-216-025-00	METAL GLAZE 100 5%	1/10W
R309	1-216-033-00	METAL GLAZE 220 5%	1/10W
R310	1-216-033-00	METAL GLAZE 220 5%	1/10W
R311	1-216-295-00	METAL GLAZE 0 5%	1/10W
R312	1-216-295-00	METAL GLAZE 0 5%	1/10W
R313	1-216-295-00	METAL GLAZE 0 5%	1/10W
R314	1-216-295-00	METAL GLAZE 0 5%	1/10W
R315	1-216-295-00	METAL GLAZE 0 5%	1/10W
R316	1-216-033-00	METAL GLAZE 220 5%	1/10W
R318	1-216-689-11	METAL GLAZE 39K 5%	1/10W
R319	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R320	1-216-025-00	METAL GLAZE 100 5%	1/10W
R321	1-216-025-00	METAL GLAZE 100 5%	1/10W
R322	1-216-025-00	METAL GLAZE 100 5%	1/10W
R323	1-216-033-00	METAL GLAZE 220 5%	1/10W
R324	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R326	1-216-025-00	METAL GLAZE 100 5%	1/10W
R327	1-216-025-00	METAL GLAZE 100 5%	1/10W
R328	1-216-129-00	METAL GLAZE 2.2M 5%	1/10W
R329	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R330	1-216-025-00	METAL GLAZE 100 5%	1/10W
R331	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R332	1-216-025-00	METAL GLAZE 100 5%	1/10W
R333	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R334	1-216-041-00	METAL GLAZE 470 5%	1/10W
R335	1-208-806-11	METAL CHIP 10K 0.50%	1/10W
R336	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R337	1-216-025-00	METAL GLAZE 100 5%	1/10W
R338	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R339	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R340	1-216-025-00	METAL GLAZE 100 5%	1/10W
R341	1-216-025-00	METAL GLAZE 100 5%	1/10W
R342	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R343	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R344	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R345	1-216-025-00	METAL GLAZE 100 5%	1/10W
R346	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R347	1-216-025-00	METAL GLAZE 100 5%	1/10W
R348	1-216-025-00	METAL GLAZE 100 5%	1/10W
R349	1-216-025-00	METAL GLAZE 100 5%	1/10W
R350	1-216-042-00	METAL GLAZE 510 5%	1/10W
R351	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R352	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R353	1-216-033-00	METAL GLAZE 220 5%	1/10W
R354	1-216-295-00	METAL GLAZE 0 5%	1/10W
R357	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R370	1-216-295-00	METAL GLAZE 0 5%	1/10W
R1001	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1002	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1010	1-216-295-00	METAL GLAZE 0 5%	1/10W
R1012	1-216-041-00	METAL GLAZE 470 5%	1/10W
R1014	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1020	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R1021	1-216-029-00	METAL GLAZE 150 5%	1/10W
R1022	1-216-029-00	METAL GLAZE 150 5%	1/10W
R1023	1-216-029-00	METAL GLAZE 150 5%	1/10W
R1024	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1026	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1027	1-216-025-00	METAL GLAZE 100 5%	1/10W
R1028	1-216-025-00	METAL GLAZE 100 5%	1/10W
< TUNER >			
TU101	1-693-338-11	TUNER/VIF (AEP) (KV-28WS2D/28WS2E/28WS2K/28WS2R)	
	1-693-340-11	TUNER/VIF (FR) (KV-28WS2B)	
	1-693-339-11	TUNER/VIF (UK) (KV-28WS2U)	
< CRYSTAL >			
X1	1-767-154-21	VIBRATOR, CERAMIC	
X201	1-760-628-11	VIBRATOR, CRYSTAL 18.432MHz	
X301	1-567-504-11	OSCILLATOR, CRYSTAL	
X302	1-567-505-11	OSCILLATOR, CRYSTAL	
X303	1-767-127-11	VIBRATOR, CERAMIC	
X1001	1-579-965-21	VIBRATOR, CRYSTAL	
*****			
*A-1638-079-A C BOARD, COMPLETE			
*****			
< CAPACITOR >			
C702	1-102-115-00	CERAMIC 560PF 10% 50V	
C703	1-102-116-00	CERAMIC 680PF 10% 50V	
C708	1-162-114-00	CERAMIC 0.0047MF 2KV	
C710	1-107-652-11	ELECT 10MF 20% 250V	
C712	1-102-116-00	CERAMIC 680PF 10% 50V	
C714	1-126-967-11	ELECT 47MF 20% 16V	
C717	1-102-114-00	CERAMIC 470PF 10% 50V	
C718	1-102-114-00	CERAMIC 470PF 10% 50V	
C719	1-102-114-00	CERAMIC 470PF 10% 50V	
C722	1-101-880-00	CERAMIC 47PF 5% 50V	
C723	1-101-880-00	CERAMIC 47PF 5% 50V	
C724	1-101-880-00	CERAMIC 47PF 5% 50V	

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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KV-28WS2

C D2 D3

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
< CONNECTOR >				R729	1-249-408-11	CARBON 180 5% 1/4W	
CN701	1-778-037-11	PIN, CONNECTOR (5MM PITCH) 6P		R731	1-249-423-11	CARBON 3.3K 5% 1/4W	
CN702	1-695-915-11	TAB (CONTACT)		R733	1-249-415-11	CARBON 680 5% 1/4W	
CN703	*1-568-882-51	PIN, CONNECTOR 7P		R734	1-247-807-31	CARBON 100 5% 1/4W	
< DIODE >				R735	1-249-415-11	CARBON 680 5% 1/4W	
D701	8-719-109-72	DIODE RD3.9HS-B2		R736	1-216-486-00	METAL OXIDE 8.2K 5% 3W F	
D702	8-719-991-33	DIODE 1SS133T-77		R739	1-249-417-11	CARBON 1K 5% 1/4W	
D706	8-719-991-33	DIODE 1SS133T-77		R740	1-249-415-11	CARBON 680 5% 1/4W	
D707	8-719-991-33	DIODE 1SS133T-77		R741	1-202-549-00	SOLID 100 20% 1/2W	
D708	8-719-991-33	DIODE 1SS133T-77		R744	1-249-421-11	CARBON 2.2K 5% 1/4W	
				R745	1-249-421-11	CARBON 2.2K 5% 1/4W	
D709	8-719-991-33	DIODE 1SS133T-77		R746	1-249-421-11	CARBON 2.2K 5% 1/4W	
D710	8-719-991-33	DIODE 1SS133T-77		R747	1-249-437-11	CARBON 47K 5% 1/4W	
D711	8-719-302-43	DIODE KL1Z		R748	1-249-417-11	CARBON 1K 5% 1/4W	
D714	8-719-991-33	DIODE 1SS133T-77		R749	1-249-435-11	CARBON 33K 5% 1/4W	
D715	8-719-991-33	DIODE 1SS133T-77		< VARIABLE RESISTOR >			
D716	8-719-991-33	DIODE 1SS133T-77		RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
D717	8-719-991-33	DIODE 1SS133T-77		RV702	1-241-656-21	RES, ADJ, METAL FILM 110M	
D718	8-719-991-33	DIODE 1SS133T-77		*****			
D719	8-719-991-33	DIODE 1SS133T-77		*A-1640-214-A D2 BOARD, COMPLETE			
D720	8-719-991-33	DIODE 1SS133T-77		*****			
< CRT SOCKET >				< CAPACITOR >			
J701	$\Delta$ 1-526-990-22	SOCKET, CRT		C1801	1-126-967-11	ELECT 47MF 20% 50V	
< COIL >				C1803	1-137-368-11	FILM 0.0047MF 5% 50V	
L704	1-408-609-41	INDUCTOR 33UH		C1804	1-126-964-11	ELECT 10MF 20% 50V	
< TRANSISTOR >				C1807	1-137-366-11	FILM 0.0022MF 5% 50V	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE		< CONNECTOR >			
Q703	8-729-906-70	TRANSISTOR BF871-127		CN1801	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P	
Q704	8-729-200-17	TRANSISTOR 2SA1091-0		CN1803	*1-568-878-51	PIN, CONNECTOR 3P	
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE		< DIODE >			
Q706	8-729-906-70	TRANSISTOR BF871-127		D1802	8-719-110-17	DIODE RD10ESB2	
Q707	8-729-200-17	TRANSISTOR 2SA1091-0		< IC >			
Q708	8-729-119-78	TRANSISTOR 2SC2785-HFE		IC1801	8-759-701-59	IC NJM78M09FA	
Q709	8-729-906-70	TRANSISTOR BF871-127		IC1802	8-759-603-37	IC M5216P	
Q710	8-729-200-17	TRANSISTOR 2SA1091-0		< LINK IC >			
Q711	8-729-026-41	TRANSISTOR 2SA933AS-QRT		JW1802	$\Delta$ 1-532-605-91	LINK, IC 0.4A (ICP-F10)	
< RESISTOR >				< RESISTOR >			
R704	1-216-486-00	METAL OXIDE 8.2K 5% 3W F		R1807	1-247-883-00	CARBON 150K 5% 1/4W	
R705	1-260-103-11	CARBON 2.2K 5% 1/2W		R1809	1-249-429-11	CARBON 10K 5% 1/4W	
R706	1-247-815-91	CARBON 220 5% 1/4W		R1810	1-249-429-11	CARBON 10K 5% 1/4W	
R707	1-249-408-11	CARBON 180 5% 1/4W		R1811	1-249-429-11	CARBON 10K 5% 1/4W	
R709	1-202-844-00	SOLID 330K 10% 1/2W		R1812	1-249-429-11	CARBON 10K 5% 1/4W	
R711	1-249-423-11	CARBON 3.3K 5% 1/4W		*****			
R712	1-260-103-11	CARBON 2.2K 5% 1/2W		*A-1640-235-A D3 BOARD, COMPLETE			
R714	1-216-486-00	METAL OXIDE 8.2K 5% 3W F		*****			
R715	1-249-417-11	CARBON 1K 5% 1/4W		< CAPACITOR >			
R716	1-247-815-91	CARBON 220 5% 1/4W		C2802	1-126-965-11	ELECT 22MF 20% 50V	
R717	1-249-408-11	CARBON 180 5% 1/4W					
R718	1-202-814-11	SOLID 33K 10% 1/2W					
R720	1-249-423-11	CARBON 3.3K 5% 1/4W					
R722	1-202-848-00	SOLID 680K 10% 1/2W					
R723	1-249-417-11	CARBON 1K 5% 1/4W					
R724	1-202-846-00	SOLID 470K 10% 1/2W					
R726	1-260-103-11	CARBON 2.2K 5% 1/2W					
R727	1-247-815-91	CARBON 220 5% 1/4W					
R728	1-216-350-11	METAL OXIDE 1.2 5% 1W F					

## KV-28WS2

D3

D

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The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
< CONNECTOR >				C614	1-128-526-11	ELECT	100MF 20% 25V
CN2801	1-568-878-51	PIN, CONNECTOR 3P		C615	1-111-067-11	ELECT	0.001MF 20% 25V
CN2802	*1-580-798-11	CONNECTOR PIN (DY) 6P		C616	1-111-067-11	ELECT	0.001MF 20% 25V
CN2803	*1-580-798-11	CONNECTOR PIN (DY) 6P		C617	1-128-339-51	ELECT	2200MF 20% 16V
< DIODE >				C618	1-136-165-00	FILM	0.1MF 5% 50V
D2801	8-719-991-33	DIODE 1SS133T-77		C619	1-102-228-00	CERAMIC	470PF 10% 500V
< TRANSISTOR >				C620	1-102-228-00	CERAMIC	470PF 10% 500V
Q2801	8-729-119-78	TRANSISTOR 2SC2785-HFE		C621	1-136-165-00	FILM	0.1MF 5% 50V
< RESISTOR >				C622	1-107-925-11	ELECT	1.0MF 20% 100V
R2801	1-249-421-11	CARBON 2.2K 5% 1/4W		C623	1-104-666-11	ELECT	220MF 20% 25V
< RELAY >				C624	1-136-165-00	FILM	0.1MF 5% 50V
RY2801	1-755-068-11	RELAY		C625	1-126-967-11	ELECT	47MF 20% 50V
< COIL >				C626	1-104-666-11	ELECT	220MF 20% 25V
T2801	1-411-981-11	COIL, CHOKE 245UH		C628	1-126-964-11	ELECT	10MF 20% 50V
*****				C629	1-111-097-11	ELECT	2200MF 20% 35V
*A-1642-190-A D BOARD, COMPLETE				C630	1-111-097-11	ELECT	2200MF 20% 35V
*****				C631	1-126-965-11	ELECT	22MF 20% 50V
4-201-023-01 SPACER, INSULATING				C632	1-104-666-11	ELECT	220MF 20% 25V
4-202-373-01 SPRING, IC				C633 $\Delta$	1-107-563-12	FILM	0.1MF 20% 300V
< CAPACITOR >				C634 $\Delta$	1-107-563-12	FILM	0.1MF 20% 300V
C502	1-102-824-00	CERAMIC 470PF 5% 50V		C635 $\Delta$	1-107-563-12	FILM	0.1MF 20% 300V
C503	1-136-165-00	FILM 0.1MF 5% 50V		C636 $\Delta$	1-113-890-51	ELECT	0.0022MF 20% 250V
C504	1-102-824-00	CERAMIC 470PF 5% 50V		C638	1-136-203-11	FILM	0.01MF 10% 630V
C506	1-126-941-11	ELECT 470MF 20% 25V		C640	1-106-220-00	MYLAR	0.1MF 10% 100V
C507	1-109-953-11	ELECT 2.2MF 20% 50V		C644	1-137-043-11	FILM	0.0047MF 10% 400V
C509	1-136-165-00	FILM 0.1MF 5% 50V		C647	1-162-116-00	CERAMIC	680PF 10% 2KV
C510	1-126-969-11	ELECT 220MF 20% 50V		C651	1-102-228-00	CERAMIC	470PF 10% 500V
C511	1-136-202-11	FILM 0.33MF 5% 63V		C800	1-137-368-11	FILM	0.0047MF 5% 50V
C513	1-106-220-00	MYLAR 0.1MF 10% 100V		C801	1-137-368-11	FILM	0.0047MF 5% 50V
C514	1-136-165-00	FILM 0.1MF 5% 50V		C802	1-102-074-00	FILM	0.001MF 10% 50V
C515	1-126-941-11	ELECT 470MF 20% 25V		C804	1-136-165-00	FILM	0.1MF 5% 50V
C517	1-126-941-11	ELECT 470MF 20% 25V		C805	1-136-207-11	FILM	0.047MF 10% 250V
C518	1-102-228-00	CERAMIC 470PF 10% 500V		C806	1-104-999-11	MYLAR	0.1MF 10% 200V
C519	1-102-228-00	CERAMIC 470PF 10% 500V		C807	1-136-109-00	FILM	0.68MF 5% 200V
C520	1-126-941-11	ELECT 470MF 20% 25V		C808	1-136-104-00	FILM	0.16MF 5% 200V
C521	1-107-698-11	ELECT 10MF 20% 25V		C810	1-107-683-11	ELECT	2.2MF 0 250V
C522	1-126-964-11	ELECT 10MF 20% 50V		C811	1-102-212-00	CERAMIC	820PF 10% 500V
C523	1-136-165-00	FILM 0.1MF 5% 50V		C812	1-136-540-11	FILM	0.82MF 5% 200V
C600 $\Delta$	1-113-890-51	ELECT 0.0022MF 20% 250V		C813	1-129-722-00	FILM	0.047MF 10% 630V
C601 $\Delta$	1-161-964-91	CERAMIC 0.0047MF 250V		C814	1-136-084-00	FILM	0.0145MF 3% 2KV
C602 $\Delta$	1-161-964-91	CERAMIC 0.0047MF 250V		C815	1-137-047-11	FILM	0.01MF 10% 400V
C603	1-125-555-11	ELECT 330MF 20% 400V		C816	1-162-134-11	CERAMIC	470PF 10% 2KV
C604	1-126-968-11	ELECT 100MF 20% 50V		C817	1-162-116-00	CERAMIC	680PF 10% 2KV
C605	1-107-929-11	ELECT 10MF 20% 100V		C818	1-162-134-11	CERAMIC	470PF 10% 2KV
C606	1-162-318-11	CERAMIC 0.001MF 10% 500V		C819	1-136-208-11	FILM	0.068MF 10% 250V
C607	1-104-666-11	ELECT 220MF 20% 25V		C820	1-102-114-00	CERAMIC	470PF 10% 50V
C608	1-109-880-11	FILM 0.0015MF 3% 2KV		C821	1-162-114-00	CERAMIC	0.0047MF 2KV
C611	1-102-228-00	CERAMIC 470PF 10% 500V		C822	1-107-662-11	ELECT	22MF 20% 250V
C612	1-111-160-91	ELECT 22MF 20% 100V		C824	1-123-024-21	ELECT	33MF 160V
C613	1-124-347-00	ELECT 100MF 20% 160V		C829	1-124-902-00	ELECT	0.47MF 20% 50V
				C830	1-124-902-00	ELECT	0.47MF 20% 50V
				C832	1-124-903-11	ELECT	1MF 20% 50V
				C834	1-128-551-11	ELECT	22MF 20% 25V
				C835	1-162-318-11	CERAMIC	0.001MF 10% 500V
				C836	1-162-117-00	CERAMIC	100PF 10% 500V
				C837	1-102-978-00	CERAMIC	220PF 5% 50V
				C838	1-102-228-00	CERAMIC	470PF 10% 500V
				C839	1-136-207-11	FILM	0.047MF 10% 250V
				C845	1-101-880-00	CERAMIC	47PF 5% 50V
				C901	1-101-810-00	CERAMIC	100PF 5% 500V

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D

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C902	1-137-372-11	FILM 0.022MF 5% 50V		D609	8-719-301-64	DIODE RU4D8	
C903	1-137-372-11	FILM 0.022MF 5% 50V		D610	8-719-046-74	DIODE AU-01Z-V1	
C904	1-104-665-11	ELECT 100MF 20% 25V		D611	8-719-058-38	DIODE FMN-G128	
C905	1-126-964-11	ELECT 10MF 20% 50V		D612	8-719-046-76	DIODE RU-3YX-V1	
C906	1-126-964-11	ELECT 10MF 20% 50V		D613	8-719-058-38	DIODE FMN-G128	
C907	1-126-964-11	ELECT 10MF 20% 50V		D614	8-719-058-38	DIODE FMN-G128	
C908	1-126-964-11	ELECT 10MF 20% 50V		D615	8-719-046-75	DIODE EU-1-V1	
C911	1-126-964-11	ELECT 10MF 20% 50V		D616	8-719-110-03	DIODE RD7.5ESB2	
C913	1-101-810-00	CERAMIC 100PF 5% 500V		D617	8-719-991-33	DIODE 1S8133T-77	
C914	1-101-004-00	CERAMIC 0.01MF 50V		D618	8-719-991-33	DIODE 1S8133T-77	
C915	1-136-166-00	FILM 0.12MF 5% 50V		D619	8-719-991-33	DIODE 1S8133T-77	
C1200	1-136-165-00	FILM 0.1MF 5% 50V		D620	8-719-991-33	DIODE 1S8133T-77	
C1201	1-136-173-00	FILM 0.47MF 5% 50V		D622	8-719-923-60	DIODE MTZJ-T-77-9.1A	
C1202	1-136-173-00	FILM 0.47MF 5% 50V		D625	8-719-991-33	DIODE 1S8133T-77	
C1203	1-136-169-00	FILM 0.22MF 5% 50V		D626	8-719-046-74	DIODE AU-01Z-V1	
C1204	1-136-169-00	FILM 0.22MF 5% 50V		D631	8-719-109-93	DIODE RD6.2ES-B2	
C1205	1-101-005-00	CERAMIC 0.022MF 50V		D800	8-719-991-33	DIODE 1S8133T-77	
C1206	1-101-005-00	CERAMIC 0.022MF 50V		D801	8-719-991-33	DIODE 1S8133T-77	
C1207	1-126-933-11	ELECT 100MF 20% 16V		D802	8-719-991-33	DIODE 1S8133T-77	
C1208	1-126-963-11	ELECT 4.7MF 20% 50V		D803	8-719-908-03	DIODE GP08D	
C1209	1-126-963-11	ELECT 4.7MF 20% 50V		D807	8-719-302-43	DIODE EL1Z	
C1212	1-162-318-11	CERAMIC 0.001MF 10% 500V		D808	8-719-908-03	DIODE GP08D	
C1213	1-162-318-11	CERAMIC 0.001MF 10% 500V		D809	8-719-018-82	DIODE RGP02-20EL-6394	
C1214	1-126-933-11	ELECT 100MF 20% 16V		D810	8-719-302-43	DIODE EL1Z	
C1215	1-136-173-00	FILM 0.47MF 5% 50V		D812	8-719-038-49	DIODE FMS-3FU-LF027-103	
C1216	1-137-366-11	FILM 0.0022MF 5% 50V		D815	8-719-908-03	DIODE GP08D	
C1217	1-137-366-11	FILM 0.0022MF 5% 50V		D817	8-719-109-85	DIODE RD5.1ES-B2	
C1218	1-126-935-11	ELECT 470MF 20% 16V		D901	8-719-030-11	DIODE SLA-570KT3F	
< CONNECTOR >				*4-203-258-01	HOLDER, LED ;D901		
CN600	$\Delta$ 1-508-786-11	PIN, CONNECTOR (5MM PITCH) 2P		D902	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN601	$\Delta$ 1-508-765-11	PIN, CONNECTOR (5MM PITCH) 3P		D903	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN603	$\Delta$ *1-580-844-11	PIN, CONNECTOR (POWER)		D904	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN800	*1-580-798-11	CONNECTOR PIN (DY) 6P		D905	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN801	*1-573-296-21	CONNECTOR, BOARD TO BOARD 10P		D906	8-719-923-60	DIODE MTZJ-T-77-9.1A	
CN803	1-695-915-21	TAB (CONTACT)		D1201	8-719-109-72	DIODE RD3.9ES-B2	
CN804	1-778-037-11	PIN, CONNECTOR 6P		< FUSE >			
CN807	1-568-878-51	PIN, CONNECTOR 3P		F601	$\Delta$ 1-576-232-21	FUSE (R.B.C.) 5A/250V	
CN900	1-568-678-11	TERMINAL BLOCK, 8 3P		$\Delta$ 1-533-230-12	HOLDER, FUSE ;F601		
CN902	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P		< FERRITE BEAD >			
CN1401	*1-568-880-51	PIN, CONNECTOR 5P		FB600	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
CN1407	1-564-511-11	PLUG, CONNECTOR 8P		FB601	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
CN1408	*1-568-879-11	PIN, CONNECTOR 4P		FB602	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
CN1420	1-568-878-51	PIN, CONNECTOR 3P		FB604	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
< DIODE >				FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
D500	8-719-109-85	DIODE RD5.1ES-B2		FB606	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
D502	8-719-979-85	DIODE EGP20G		FB607	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
D503	8-719-979-85	DIODE EGP20G		FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
D504	8-719-991-33	DIODE 1S8133T-77		FB800	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
D505	8-719-982-03	DIODE MTZJ-3.6A		< IC >			
D506	8-719-991-33	DIODE 1S8133T-77		IC500	8-759-192-71	IC STV9379	
D507	8-719-109-85	DIODE RD5.1ES-B2		IC600	8-749-010-92	IC STR-86709	
D600	8-719-510-53	DIODE D48B60L		IC601	$\Delta$ 8-749-924-92	IC TLP721 (DA-)	
D601	8-719-046-77	DIODE EML-V1		IC602	8-749-920-61	IC SE-135N	
D603	8-719-109-97	DIODE RD6.8ES-B2		IC603	8-759-144-82	IC $\mu$ PC2405HF	
D604	8-719-046-75	DIODE EU-1-V1		IC604	8-759-510-52	IC TRA7605	
D605	8-719-302-43	DIODE EL1Z		IC606	8-759-267-25	IC LM2940T-9.0	
D606	8-719-302-43	DIODE EL1Z		IC800	8-759-103-93	IC $\mu$ PC393C	
D607	8-719-046-78	DIODE EG-1Z-V1		IC900	8-747-905-11	RAY CATCHER ELEMENT SBX1790-51	
D608	8-719-302-06	DIODE EU2A					

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REF.NO.	PART NO.	DESCRIPTION	REMARK
IC901	8-749-012-12	IC I8474	
IC1200	8-759-250-68	IC TDA7264	
IC1201	8-759-502-21	IC TDA2822M	
< JACK SOCKET >			
J900	1-764-606-11	JACK	
J1200	1-770-218-11	JACK, PIN	
< COIL >			
L502	1-412-519-11	INDUCTOR 3.3UH	
L503	1-412-519-11	INDUCTOR 3.3UH	
L609	1-412-533-21	INDUCTOR 47UH	
L611	1-412-527-11	INDUCTOR 15UH	
L612	1-412-522-41	INDUCTOR 5.6UH	
L613	1-412-522-41	INDUCTOR 5.6UH	
L615	1-412-529-11	INDUCTOR 22UH	
L616	1-412-533-21	INDUCTOR 47UH	
L801	1-459-111-00	COIL, DRAM CORE (CDI)	
L802	1-459-104-00	COIL, WITH CORE	
L803	1-420-872-00	COIL, AIR-CORE	
L804	1-429-306-11	TRANSFORMER, HORIZONTAL LINEARITY	
L805	1-406-674-11	COIL, CHOKO 3.3MMH	
L806	1-412-527-11	INDUCTOR 15UH	
L809	1-412-533-21	INDUCTOR 47UH	
L811	1-406-978-11	COIL, CHOKO 150UH	
L813	1-412-552-11	INDUCTOR 2.2MMH	
L901	1-408-603-31	INDUCTOR 10UH	
L902	1-408-603-31	INDUCTOR 10UH	
L903	1-408-409-00	INDUCTOR 10UH	
L904	1-408-409-00	INDUCTOR 10UH	
< IC LINK >			
P8600	△ 1-532-686-91	LINK, IC 2.7A (ICP-F75)	
P8601	△ 1-532-686-91	LINK, IC 2.7A (ICP-F75)	
P8602	△ 1-532-686-91	LINK, IC 2.7A (ICP-F75)	
P8603	△ 1-532-686-91	LINK, IC 2.7A (ICP-F75)	
< TRANSISTOR >			
Q501	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q502	8-729-119-76	TRANSISTOR 28A1175-HFE	
Q503	8-729-900-89	TRANSISTOR DTC144ES	
Q601	8-729-025-04	TRANSISTOR 28C3852A	
Q602	8-729-320-28	TRANSISTOR 28A1667	
Q603	8-729-805-05	TRANSISTOR 28C3601-E	
Q604	8-729-024-35	TRANSISTOR 28C2808STP-R	
Q605	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q606	8-729-900-65	TRANSISTOR DTA144ES	
Q607	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q800	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q801	8-729-017-06	TRANSISTOR 28C4793	
Q802	8-729-016-32	TRANSISTOR 28C4927-01	
Q803	8-729-119-80	TRANSISTOR 28C2688-LK	
Q804	8-729-900-89	TRANSISTOR DTC144ES	
Q805	8-729-900-89	TRANSISTOR DTC144ES	
Q900	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q1200	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q1201	8-729-900-74	TRANSISTOR DTC143TS	
Q1202	8-729-900-80	TRANSISTOR DTC114ES	
Q1203	8-729-900-74	TRANSISTOR DTC143TS	
Q1204	8-729-900-74	TRANSISTOR DTC143TS	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
< RESISTOR >			
R500	1-215-457-00	METAL 33K 1%	1/4W
R502	1-249-421-11	CARBON 2.2K 5%	1/4W
R503	1-249-429-11	CARBON 10K 5%	1/4W
R504	1-215-457-00	METAL 33K 1%	1/4W
R505	1-249-382-11	CARBON 1.2 5%	1/4W F
R507	1-215-888-00	METAL OXIDE 220 5%	2W F
R508	1-216-371-00	METAL OXIDE 1.5 5%	2W F
R509	1-249-443-11	CARBON 0.47 5%	1/4W F
R510	1-249-443-11	CARBON 0.47 5%	1/4W F
R520	1-215-457-00	METAL 33K 1%	1/4W
R521	1-215-457-00	METAL 33K 1%	1/4W
R522	1-247-863-91	CARBON 22K 5%	1/4W
R523	1-247-863-91	CARBON 22K 5%	1/4W
R524	1-249-425-11	CARBON 4.7K 5%	1/4W
R525	1-249-425-11	CARBON 4.7K 5%	1/4W
R526	1-249-421-11	CARBON 2.2K 5%	1/4W
R600	1-216-490-11	METAL OXIDE 39K 5%	3W F
R601	1-249-417-11	CARBON 1K 5%	1/4W
R602	1-215-473-00	METAL 150K 1%	1/4W
R603	1-215-898-11	METAL OXIDE 10K 5%	2W F
R604	1-249-420-11	CARBON 1.8K 5%	1/4W
R605	1-216-362-11	METAL OXIDE 0.27 5%	2W F
R607	1-216-421-11	METAL OXIDE 12 5%	1W F
R608	1-216-365-00	METAL OXIDE 0.47 5%	2W F
R610	1-215-427-00	METAL 1.8K 1%	1/4W
R611	1-216-354-11	METAL OXIDE 2.7 5%	1W F
R612	1-249-428-11	CARBON 8.2K 5%	1/4W
R613	1-249-417-11	CARBON 1K 5%	1/4W
R614	1-215-877-11	METAL OXIDE 22K 5%	1W F
R615	1-249-435-11	CARBON 33K 5%	1/4W
R616	1-215-471-00	METAL 120K 1%	1/4W
R617	1-215-901-00	METAL OXIDE 33K 5%	2W F
R618	1-247-863-91	CARBON 22K 5%	1/4W
R619	1-216-425-11	METAL OXIDE 56 5%	1W F
R620	1-260-131-11	CARBON 470K 5%	1/2W
R621	1-216-425-11	METAL OXIDE 56 5%	1W F
R622	1-249-437-11	CARBON 47K 5%	1/4W
R623	1-249-429-11	CARBON 10K 5%	1/4W
R624	1-249-393-11	CARBON 10 5%	1/4W F
R625	1-249-434-11	CARBON 27K 5%	1/4W
R626	1-249-430-11	CARBON 12K 5%	1/4W
R627	1-216-347-11	METAL OXIDE 0.68 5%	1W F
R628	1-249-415-11	CARBON 680 5%	1/4W F
R629	△ 1-244-945-91	CARBON 1M 5%	1/2W
R630	△ 1-218-265-21	METAL 8.2M 5%	1W
R631	△ 1-205-949-11	WIREWOUND 1.8 5%	10W
R632	1-247-807-31	CARBON 100 5%	1/4W
R633	1-247-807-31	CARBON 100 5%	1/4W
R634	1-249-397-11	CARBON 22 5%	1/4W F
R635	1-249-437-11	CARBON 47K 5%	1/4W
R636	1-249-417-11	CARBON 1K 5%	1/4W
R637	1-247-815-91	CARBON 220 5%	1/4W
R638	1-247-863-91	CARBON 22K 5%	1/4W
R639	1-215-427-00	METAL 1.8K 1%	1/4W
R642	△ 1-205-949-11	WIREWOUND 1.8 5%	10W
R645	1-249-422-11	CARBON 2.7K 5%	1/4W
R646	1-249-377-11	CARBON 0.47 5%	1/4W F
R647	1-202-933-61	FUSIBLE 0.1 10%	1/2W F
R649	1-249-426-11	CARBON 5.6K 5%	1/4W F

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**D** **VM**

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R800	1-249-421-11	CARBON	2.2K 5% 1/4W	R1201	1-249-434-11	CARBON	27K 5% 1/4W
R802	1-249-429-11	CARBON	10K 5% 1/4W	R1202	1-249-389-11	CARBON	4.7 5% 1/4W F
R803	1-249-423-11	CARBON	3.3K 5% 1/4W	R1203	1-249-421-11	CARBON	2.2K 5% 1/4W
R805	1-247-863-91	CARBON	22K 5% 1/4W	R1204	1-249-421-11	CARBON	2.2K 5% 1/4W
R809	1-247-890-00	CARBON	330K 5% 1/4W	R1205	1-249-428-11	CARBON	8.2K 5% 1/4W
R812	1-249-421-11	CARBON	2.2K 5% 1/4W	R1206	1-249-428-11	CARBON	8.2K 5% 1/4W
R813	1-215-867-00	METAL OXIDE	470 5% 1W F	R1207	1-249-413-11	CARBON	470 5% 1/4W
R814	1-249-411-11	CARBON	330 5% 1/4W	R1208	1-212-849-00	FUSIBLE	4.7 5% 1/4W F
R816	1-216-481-11	METAL OXIDE	1.2K 5% 3W F	R1209	1-212-849-00	FUSIBLE	4.7 5% 1/4W F
R817	1-216-481-11	METAL OXIDE	1.2K 5% 3W F	R1210	1-249-413-11	CARBON	470 5% 1/4W
R818	1-215-883-11	METAL OXIDE	33 5% 2W F	R1211	1-249-424-11	CARBON	3.9K 5% 1/4W
R819	1-216-345-11	METAL OXIDE	0.47 5% 1W F	R1212	1-249-424-11	CARBON	3.9K 5% 1/4W
R820	1-249-403-11	CARBON	68 5% 1/4W	R1213	1-249-421-11	CARBON	2.2K 5% 1/4W
R821	1-215-909-11	METAL OXIDE	47 5% 3W F	R1216	1-249-413-11	CARBON	470 5% 1/4W
R822	1-215-868-00	METAL OXIDE	680 5% 1W F	R1217	1-249-425-11	CARBON	4.7K 5% 1/4W
R824	1-249-420-11	CARBON	1.8K 5% 1/4W	< RELAY >			
R826	1-247-752-11	CARBON	1K 5% 1/2W	RY600	$\Delta$ 1-755-018-11	RELAY	
R827	1-249-425-11	CARBON	4.7K 5% 1/4W	< SWITCH >			
R828	1-247-863-91	CARBON	22K 5% 1/4W	S601	$\Delta$ 1-571-433-21	SWITCH, PUSH (AC POWER)	
R829	1-249-493-11	CARBON	56K 5% 1/2W	S900	1-692-979-11	SWITCH, TACTILE	
R830	1-217-778-11	FUSIBLE	1K 5% 1W F	S901	1-692-979-11	SWITCH, TACTILE	
R832	1-215-877-11	METAL OXIDE	22K 5% 1W F	S902	1-692-979-11	SWITCH, TACTILE	
R833	1-249-441-11	CARBON	100K 5% 1/4W	< SPARK GAP >			
R835	1-216-471-11	METAL OXIDE	27 5% 3W F	SG801	1-519-422-11	GAP, SPARK	
R836	1-249-439-11	CARBON	68K 5% 1/4W	< TRANSFORMER >			
R837	1-249-427-11	CARBON	6.8K 5% 1/4W	LF600	$\Delta$ 1-421-776-21	LFT	
R840	1-247-815-91	CARBON	220 5% 1/4W	LF601	$\Delta$ 1-421-776-21	LFT	
R841	1-249-418-11	CARBON	1.2K 5% 1/4W	T601	$\Delta$ 1-429-604-11	SRT	
R842	1-249-441-11	CARBON	100K 5% 1/4W	T800	1-426-981-11	TRANSFORMER, FERRITE (PMT)	
R843	1-247-891-00	CARBON	330K 5% 1/4W	T803	$\Delta$ 1-453-169-11	TRANSFORMER ASSY, FLYBACK (UX-1604A2)	
R846	1-247-893-11	CARBON	390K 5% 1/4W	T804	1-437-090-31	HDT	
R847	1-247-897-11	CARBON	560K 5% 1/4W	< THERMISTOR >			
R848	1-249-863-91	CARBON	22K 5% 1/4W	TEP600	$\Delta$ 1-809-827-11	THERMISTOR, POSITIVE	
R849	1-249-429-11	CARBON	10K 5% 1/4W	*****			
R850	1-249-425-11	CARBON	4.7K 5% 1/4W	*A-1644-070-A	VM BOARD, COMPLETE	*****	
R851	1-215-898-11	METAL OXIDE	10K 5% 2W F	*4-368-683-21	SPRING, TRANSISTOR		
R852	1-249-432-11	CARBON	18K 5% 1/4W	< CAPACITOR >			
R870	1-216-349-00	METAL OXIDE	1 5% 1W F	C1701	1-126-933-11	ELECT	100MF 20% 16V
R900	1-247-815-91	CARBON	220 5% 1/4W	C1702	1-128-551-11	ELECT	22MF 20% 25V
R901	1-247-734-11	CARBON	39 5% 1/2W	C1703	1-126-933-11	ELECT	100MF 20% 16V
R902	1-247-734-11	CARBON	39 5% 1/2W	C1704	1-107-357-11	FILM	0.47MF 5% 100V
R904	1-249-389-11	CARBON	4.7 5% 1/4W F	C1705	1-107-638-11	ELECT	33MF 20% 160V
R905	1-247-804-11	CARBON	75 5% 1/4W	C1706	1-104-999-11	FILM	0.1MF 5% 200V
R906	1-247-804-11	CARBON	75 5% 1/4W	C1707	1-137-397-11	FILM	0.047MF 5% 100V
R907	1-247-804-11	CARBON	75 5% 1/4W	C1708	1-137-364-11	FILM	0.001MF 5% 50V
R908	1-249-401-11	CARBON	47 5% 1/4W	C1709	1-137-364-11	FILM	0.001MF 5% 50V
R909	1-249-429-11	CARBON	10K 5% 1/4W	C1710	1-102-074-00	CERAMIC	0.001MF 10% 50V
R910	1-249-422-11	CARBON	2.7K 5% 1/4W	C1720	1-107-667-11	ELECT	2.2MF 20% 160V
R911	1-249-426-11	CARBON	5.6K 5% 1/4W	C1721	1-137-397-11	FILM	0.047MF 5% 100V
R912	1-249-429-11	CARBON	10K 5% 1/4W	C1722	1-126-934-11	ELECT	220MF 20% 16V
R913	1-247-863-91	CARBON	22K 5% 1/4W				
R914	1-249-437-11	CARBON	47K 5% 1/4W				
R919	1-249-437-11	CARBON	47K 5% 1/4W				
R921	1-249-437-11	CARBON	47K 5% 1/4W				
R922	1-247-807-31	CARBON	100 5% 1/4W				
R923	1-249-421-11	CARBON	2.2K 5% 1/4W				
R924	1-259-884-11	CARBON	4.7M 5% 1/4W				
R925	1-247-807-31	CARBON	100 5% 1/4W				
R926	1-259-884-11	CARBON	4.7K 5% 1/4W				
R1200	1-249-425-11	CARBON	4.7K 5% 1/4W				

## KV-28WS2

VM

K1

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REF.NO.	PART NO.	DESCRIPTION	REMARK
C1723	1-161-830-00	CERAMIC 0.0047MF	500V
C1725	1-128-551-11	ELECT 22MF	20% 25V
C1726	1-126-934-11	ELECT 220MF	20% 16V
< CONNECTOR >			
CN1015	*1-568-880-51	PIN, CONNECTOR 5P	
CN1718	1-774-418-11	CONNECTOR, BOARD TO BOARD 8P	
< DIODE >			
D1701	8-719-991-33	DIODE 1SS133T-77	
D1702	8-719-110-88	DIODE RD39ES-B2	
D1703	8-719-110-88	DIODE RD39ES-B2	
< COIL >			
L1701	1-408-409-00	INDUCTOR 10UH	
L1702	1-408-403-00	INDUCTOR 3.3UH	
L1703	1-408-409-00	INDUCTOR 10UH	
L1704	1-408-418-00	INDUCTOR 56UH	
L1705	1-408-418-00	INDUCTOR 56UH	
< TRANSISTOR >			
Q1701	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q1702	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q1703	8-729-017-05	TRANSISTOR 2SA1837	
Q1704	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q1706	8-729-017-06	TRANSISTOR 28C4793	
Q1708	8-729-119-78	TRANSISTOR 28C2785-HFE	
Q1709	8-729-119-78	TRANSISTOR 28C2785-HFE	
< RESISTOR >			
R1701	1-249-417-11	CARBON 1K 5%	1/4W
R1702	1-249-417-11	CARBON 1K 5%	1/4W
R1703	1-249-421-11	CARBON 2.2K 5%	1/4W
R1704	1-249-415-11	CARBON 680 5%	1/4W
R1705	1-247-815-91	CARBON 220 5%	1/4W
R1706	1-247-815-91	CARBON 220 5%	1/4W
R1708	1-249-412-11	CARBON 390 5%	1/4W
R1712	1-260-311-11	CARBON 39 5%	1/2W
R1713	1-249-384-11	CARBON 1.8 5%	1/4W F
R1714	1-249-414-11	CARBON 560 5%	1/4W F
R1715	1-249-432-11	CARBON 18K 5%	1/4W
R1716	1-249-417-11	CARBON 1K 5%	1/4W F
R1717	1-216-476-11	METAL OXIDE 180 5%	3W F
R1718	1-249-432-11	CARBON 18K 5%	1/4W
R1719	1-249-384-11	CARBON 1.8 5%	1/4W F
R1720	1-249-400-11	CARBON 39 5%	1/4W F
R1721	1-249-414-11	CARBON 560 5%	1/4W
R1722	1-249-401-11	CARBON 47 5%	1/4W
R1724	1-249-400-11	CARBON 39 5%	1/4W
R1725	1-216-451-11	METAL OXIDE 120 5%	2W F
R1728	1-249-413-11	CARBON 470 5%	1/4W
R1729	1-249-413-11	CARBON 470 5%	1/4W
R1730	1-249-422-11	CARBON 2.7K 5%	1/4W
R1731	1-249-411-11	CARBON 330 5%	1/4W

REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1649-018-A K1 BOARD, COMPLETE *****			
4-202-373-01 SPRING, IC			
< CAPACITOR >			
C261	1-136-173-00	FILM 0.47MF	5% 50V
C262	1-136-165-00	FILM 0.1MF	5% 50V
C263	1-136-173-00	FILM 0.47MF	5% 50V
C264	1-136-173-00	FILM 0.47MF	5% 50V
C265	1-137-366-11	FILM 0.0022MF	5% 50V
C266	1-137-366-11	FILM 0.0022MF	5% 50V
C267	1-136-169-00	FILM 0.22MF	5% 50V
C268	1-136-169-00	FILM 0.22MF	5% 50V
C269	1-101-005-00	CERAMIC 0.022MF	50V
C270	1-101-005-00	CERAMIC 0.022MF	50V
C271	1-126-952-11	ELECT 1000MF	20% 35V
C272	1-126-952-11	ELECT 1000MF	20% 35V
< CONNECTOR >			
CN1303	*1-568-879-11	PIN, CONNECTOR 4P	
CN1304	*1-568-879-11	PIN, CONNECTOR 4P	
CN1306	1-568-878-51	PIN, CONNECTOR 3P	
CN1307	*1-564-511-11	PLUG, CONNECTOR 8P	
< DIODE >			
D260	8-719-109-72	DIODE RD3.9ES-B2	
< IC >			
IC260	8-759-250-68	IC TDA7264	
< TRANSISTOR >			
Q260	8-729-900-74	TRANSISTOR DTC143TS	
Q261	8-729-119-78	TRANSISTOR 28C2785-HFE	
< RESISTOR >			
R261	1-249-413-11	CARBON 470 5%	1/4W
R262	1-249-421-11	CARBON 2.2K 5%	1/4W
R263	1-249-434-11	CARBON 27K 5%	1/4W
R264	1-249-425-11	CARBON 4.7K 5%	1/4W
R265	1-249-424-11	CARBON 3.9K 5%	1/4W
R266	1-249-424-11	CARBON 3.9K 5%	1/4W
R267	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
R268	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
*****			
*A-1651-088-A J BOARD, COMPLETE *****			
< CAPACITOR >			
C290	1-101-003-00	CERAMIC 0.0047MF	50V
C291	1-101-005-00	CERAMIC 0.022MF	50V
C293	1-101-003-00	CERAMIC 0.0047MF	50V
C294	1-101-005-00	CERAMIC 0.022MF	50V
C296	1-101-003-00	CERAMIC 0.0047MF	50V
C297	1-101-005-00	CERAMIC 0.022MF	50V
< CONNECTOR >			
CN1204	*1-564-519-11	PLUG, CONNECTOR 4P	

Les composants identifiés par une trame et une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and marked  $\triangle$  are critical for safety. Replace only with the part number specified.

KV-28WS2

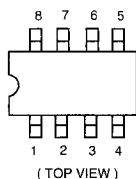
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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
CN1206	*1-564-518-11	PLUG, CONNECTOR 3P		MISCELLANEOUS			
CN1208	*1-564-519-11	PLUG, CONNECTOR 4P		*****			
CN1210	*1-564-519-11	PLUG, CONNECTOR 4P		$\triangle$ 1-411-893-11	COIL, DEGAUSSING		
CN1211	*1-564-519-11	PLUG, CONNECTOR 4P		1-452-032-00	MAGNET, DISK; 10MM $\phi$		
CN1299	*1-564-519-11	PLUG, CONNECTOR 4P		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$		
		< SOCKET >		1-452-724-22	COIL NA ROTATION (RT-165)		
J291	1-537-339-11	TERMINAL BOARD		$\triangle$ 1-453-169-11	TRANSFORMER ASSY, FLYBACK(UX-1604A2)		
J292	1-537-339-11	TERMINAL BOARD					
		< RESISTOR >		1-504-418-21	SPEAKER (5CM)		
R290	1-249-426-11	CARBON	5.6K 5% 1/4W	1-505-154-11	SPEAKER (6.5CM)		
R291	1-249-426-11	CARBON	5.6K 5% 1/4W	1-505-155-11	SPEAKER (10CM)		
R292	1-249-426-11	CARBON	5.6K 5% 1/4W	$\triangle$ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE		
*****				$\triangle$ 1-571-433-21	SWITCH, PUSH (AC POWER)		
				1-693-338-11	TUNER/VIF (AEP)		
					(KV-28WS2D/28WS2E/28WS2K/28WS2R)		
				1-693-340-11	TUNER/VIF (FR) (KV-28WS2B)		
				1-693-339-11	TUNER/VIF (UK) (KV-28WS2U)		
				$\triangle$ 1-751-680-11	CORD, POWER (WITH NOISE FILTER)		
					2.5A/250V (KV-28WS2B/28WS2D/28WS2E)		
				$\triangle$ 1-690-270-21	CORD, POWER (WITH CONNECTOR)		
					2.5A/250V (KV-28WS2K/28WS2R)		
				$\triangle$ 1-776-204-11	CORD, POWER (FILTER)		
					3.0A/250V (KV-28WS2U)		
				$\triangle$ 8-451-434-21	DEFLECTION YOKE (Y28G1A-B)		
				$\triangle$ 8-453-005-61	NECK ASSY, PICTURE TUBE (NA297-M6)		
V901	$\triangle$ 8-737-763-05	PICTURE TUBE (SD-284T) (W66LGY011X)					
*****							
ACCESSORIES AND PACKING MATERIALS							
*****							
	1-765-654-11	CABLE SPEAKER					
	4-203-538-51	MANUAL, INSTRUCTION (KV-28WS2B)					
		(FRENCH/GERMAN/ITALIAN/DUTCH)					
	4-203-538-11	MANUAL, INSTRUCTION (KV-28WS2D)					
		(DUTCH/GREEK/ENGLISH/GERMAN)					
	4-203-538-71	MANUAL, INSTRUCTION (KV-28WS2E)					
		(FINNISH/DANISH/NORWEGIAN/SWEDISH)					
	4-203-538-91	MANUAL, INSTRUCTION (KV-28WS2K/28WS2R)					
		(CZECH/ENGLISH/POLISH/BULGARIAN/RUSSIAN)					
	4-203-538-61	MANUAL, INSTRUCTION (KV-28WS2U)					
		(ENGLISH)					
	*4-050-191-01	CUSHION (UPPER) (ASSY)					
	*4-050-192-01	CUSHION (LOWER) (ASSY)					
	*4-050-193-01	INDIVIDUAL CARTON					
	*4-395-957-01	BAG, PROTECTION					
REMOTE COMMANDER							
*****							
	1-473-692-11	COMMANDER, STANDARD TYPE (RM-862)					
*****							

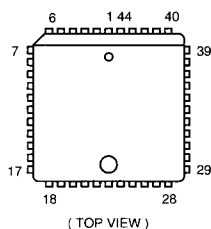


## 5-4. SEMICONDUCTORS

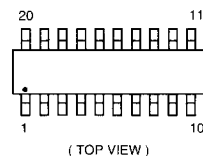
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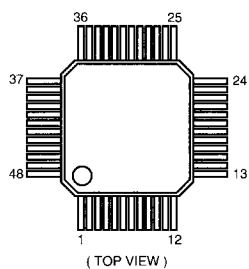
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CF70203FN-F  
CF70204FN-R  
CF70211FN-R



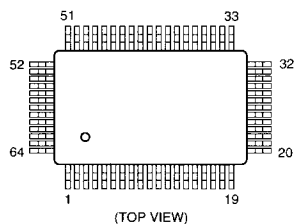
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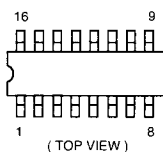
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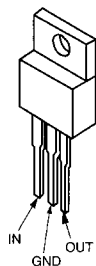
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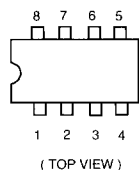
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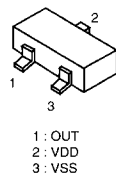
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MCT7812CT  
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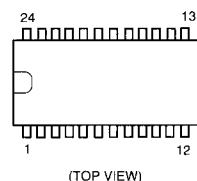
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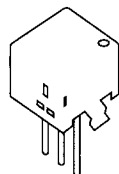
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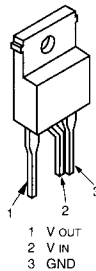
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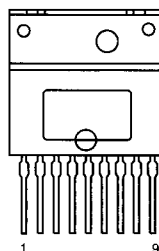
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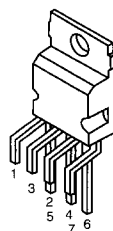
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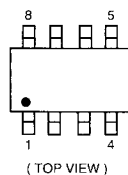
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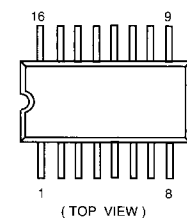
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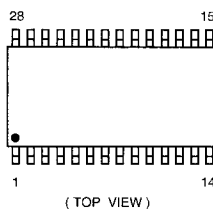
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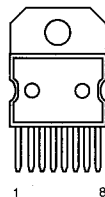
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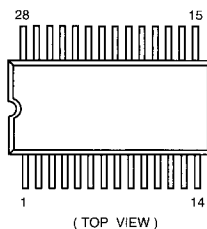
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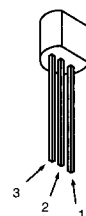
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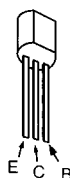


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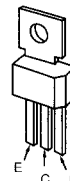


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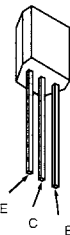
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2SC2389S-R  
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2SC2808S-R



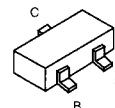
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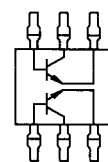
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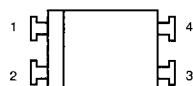
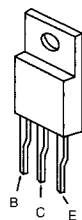
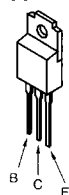
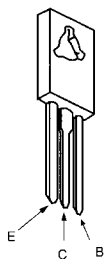
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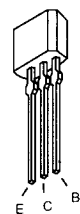
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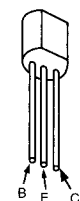
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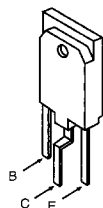
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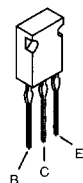
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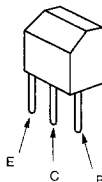
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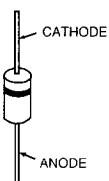
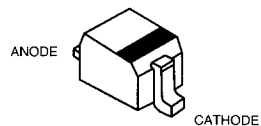
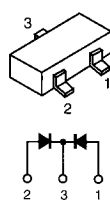
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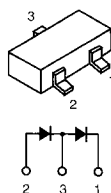
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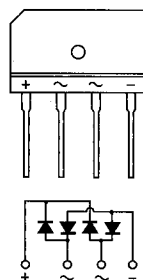
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EGP20G	RGP02
EL1Z	RGP10GPKG23
EM1-V1	RGP15GPKG23
EU-1-V1	RU3YX-LF-C4
EU-1Z	RU-3YX-V1
FML-G12S	RU4

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MA8330  
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1SV214DAN202K  
UMZ12N

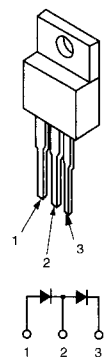
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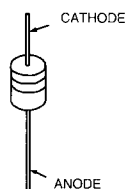
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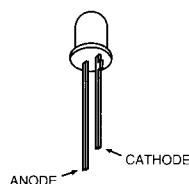
FMS-3FU



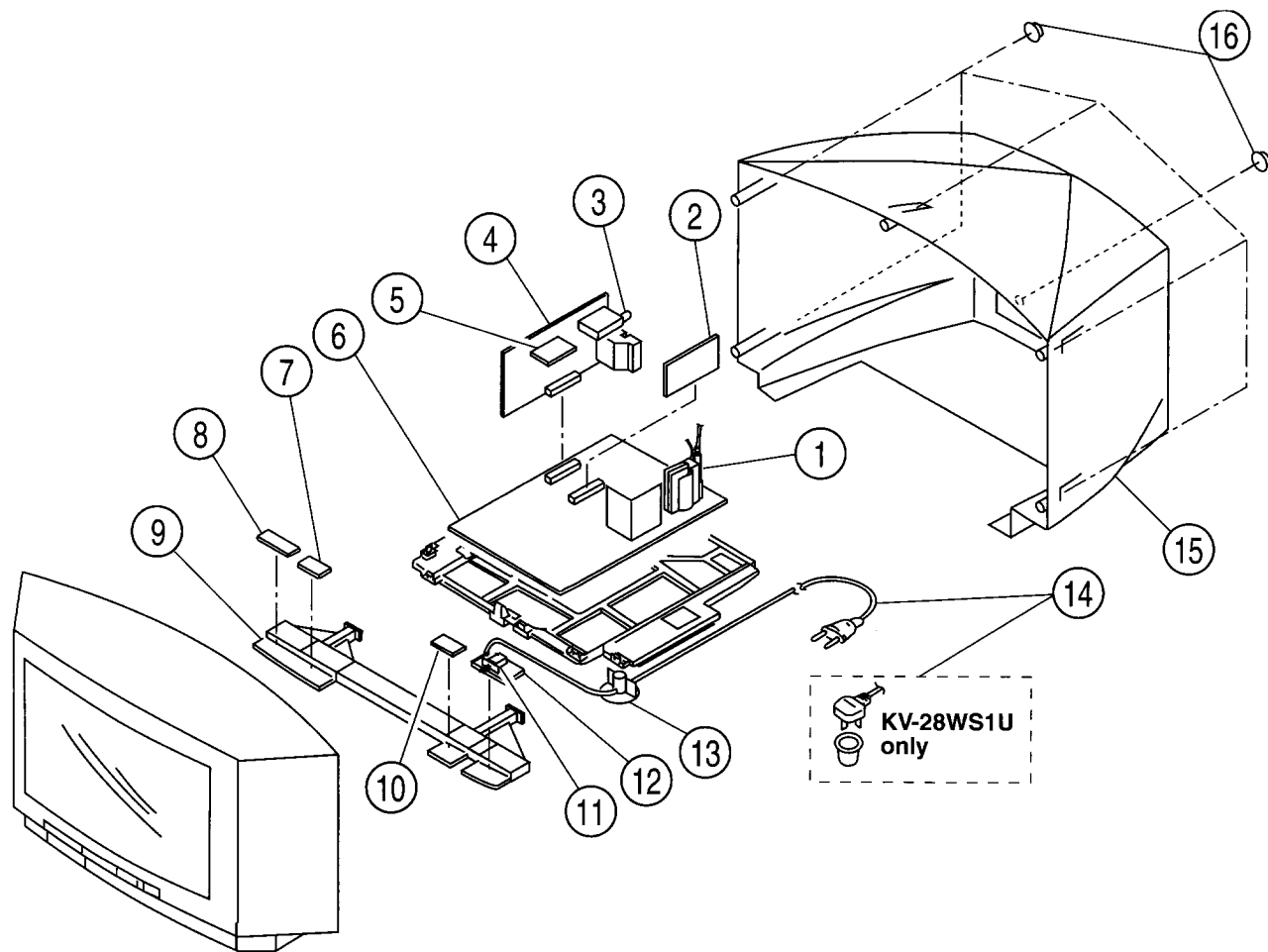
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MTZJ-3.6A	MTZJ-39C
MTZJ-3.9B	RD3.9ESB2
MTZJ-4.7B	RD5.1ESB2
MTZJ-5.1B	RD5.6ESB2
MTZJ-5.6B	RD6.8ESB2
MTZJ-6.8C	RD7.5ESB2
MTZJ-7.5C	RD9.1ESB3
MTZJ-9.1	1SS133
MTZJ-9.1A	



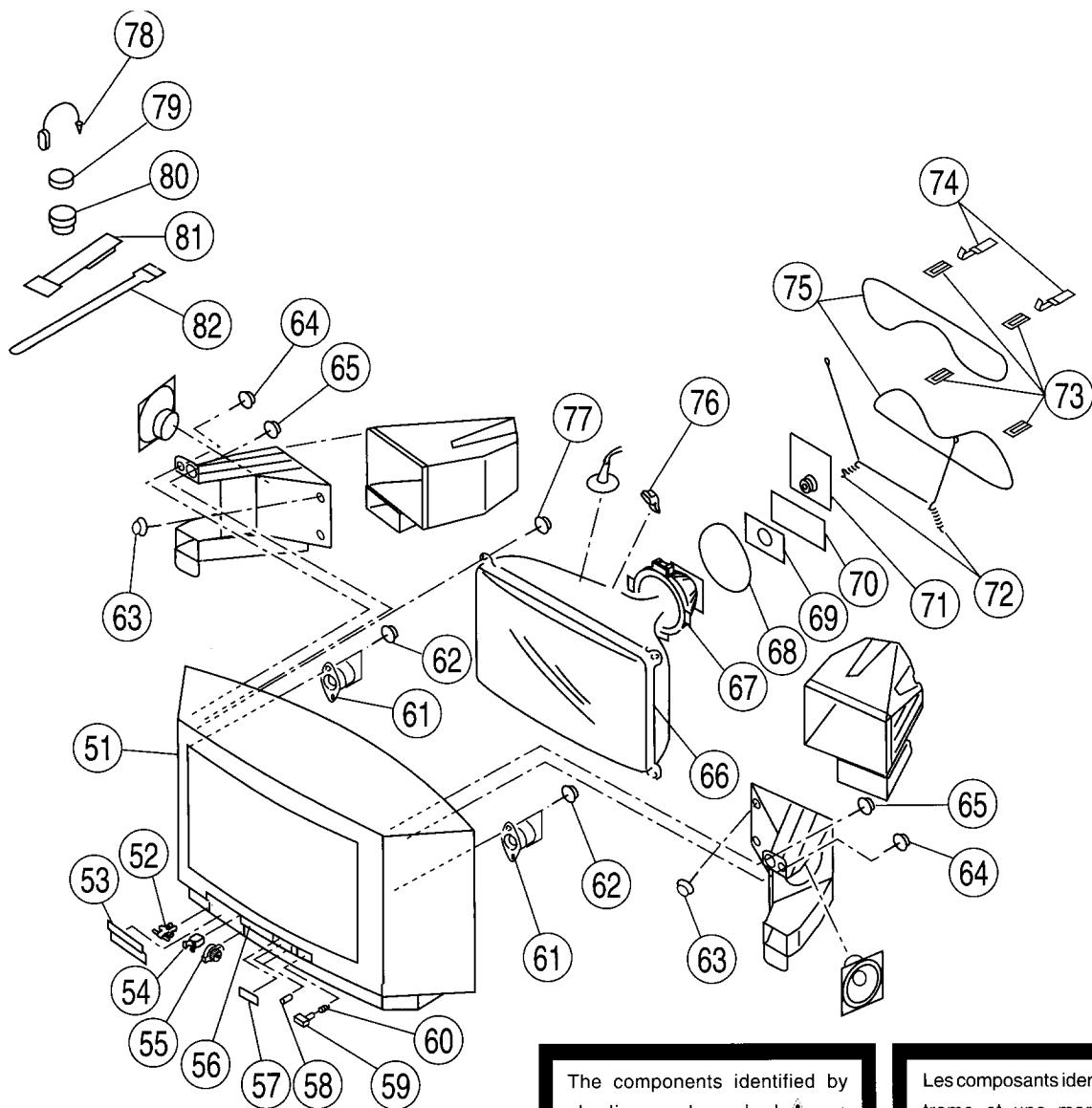
SLA-570KT3F



## 6-1. CHASSIS



## 6-2. PICTURE TUBE



The components identified by shading and marked ! are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque ! sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.